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**THE PRACTICAL TEACHER.**



THE  
PRACTICAL TEACHER,  
OR  
FAMILIAR EXPLANATIONS & ILLUSTRATIONS  
OF  
THE MODUS OPERANDI  
OF THE  
**SCHOOL ROOM.**

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BY E. LAMBORN.

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LANCASTER :  
PUBLISHED BY MURRAY & STOEK.  
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1855.

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Entered according to Act of Congress, in the year 1855,  
BY MURRAY & STOEK,  
In the Clerk's Office of the Eastern District of Pennsylvania.

PRINTED BY  
WM. B. WILEY,  
LANCASTER.



TO  
HON. THO. H. BURROWES,  
ONE OF THE EARLIEST AND  
FIRMEST SUPPORTERS  
OF THE  
COMMON SCHOOLS  
OF  
PENNSYLVANIA,

THIS WORK IS RESPECTFULLY DEDICATED

BY THE AUTHOR.



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## P R E F A C E.

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As teaching is about to become a distinct profession in our good old State of Pennsylvania, and a higher standard of professional attainments beginning to be demanded ; it is thought that a selection of educational precepts from the experience of practical Teachers, making a manual of practical directions, will be useful to Teachers generally, and especially to the young and inexperienced.

The writings of PAGE, MANN and others, have, with the different Educational Journals, done much to assist the School Teacher: and the consequence is—a general improvement in our schools.

The race of sour, formal, bookish, *pouring in* School-masters is passing away ; and professional Teachers, endeavoring to assist the “ young idea to shoot,” are taking their place.

But the wants of the practical Teacher of the Common School, seem to demand a work, which, while it is relieved of the superabundant matter, contains the practical part of the “ *Teacher's Library*,” and other educational works : together with the experience of many of our Common School Teachers.

He who has read PAGE, NORTHEND, MANN, and others, has been profited thereby. He who is a regular reader of an Educational Journal, is a better Teacher than he who is not.

But the wants of the times, demand something more specific.

Of what avail are the lofty harangues of BISHOP POTTER to him who cannot teach a child his A B C ? Normal Schools are the wants of the present age. Teachers' Institutes, which are springing up over the State, supply, in a degree, their place. They furnish Teachers, not only with

general rules for teaching, but special directions, for the teaching of different branches.

This work is intended, in some degree, to supply their place. It will consist of a compendium of selections from the best Educational Journals and other works; suggestions of practical Teachers, prepared by them expressly for this work, collected from their writings, their sayings at Teachers' Institutes, &c.

It is an undeniable fact, that with all the valuable qualities necessary for the Teacher, described by PAGE, and others, he who knows not the quickest method of teaching the primary branches of the school-room, must, in this *practical age*, fail as a successful Teacher. The people of this age are too *practical* to be satisfied with the "*waking up of mind*" alone. A B C must be taught; and while we admit that the old "*pouring in*" process of teaching is radically wrong, and that the system of "*developing the faculties*" of the child, so beautifully portrayed by different authors, should be the primary object of the Teacher,—we, as practical Teachers, need something more.

In accordance, therefore, with these views, the compiler, while keeping in view the "*developing of the faculties*," the "*waking up*" of mind, as the principal object of the Teacher, has selected, in addition thereto, from the experience of *practical Teachers*, the *practical application* of this theory in the teaching of A B C, reading, writing, arithmetic, &c., &c., by modes, in their experience, the shortest and best.

E. LAMBORN.

*West Lampeter, Lancaster co., Jan. 1st, 1855.*

## CHAPTER I.

### HOW TO TEACH.

“To teach a child his A, B, C, is not to educate him.”—FRS. WAYLAND.

The first requisite for a successful Teacher is to love teaching. He who does not love teaching is not fit for it.—It has been remarked, that “he who can be lonesome with children, should leave the school room.” It is equally necessary to make the school room, and all connected with it, interesting to the pupil.

A Teacher of Lancaster county, writes as follows in the *Pennsylvania School Journal*:—“Kindness mixed with dignity of character, commands respect, and will contribute more to the enforcement of obedience than all the torture ever resorted to in the school room. Kindness begets love; and love is the strongest passion of the human heart. Armed with the powerful weapon of kindness, the Teacher’s control is almost infinite.”

“Be kind, yet firm,” says a celebrated Educationist.

Having gained the confidence of both parents and pupils, (which can be done most effectually at the fireside of the parent,\*) let there be “a good correspondence between master and pupil.” Let your government be kind, but parental.—Make but few rules. A parent makes but few rules for the government of his family.

Mr. PAGE says: “The main business in school is *instruction* and not *government*.”

Let the Teacher *govern himself*. A noisy Teacher makes a

\* Visit parents frequently.

noisy school. Keep your pupils employed. Let *industry* be your watchword, and you will have order. Not that a child should be kept like a slave, with his eyes fixed mechanically on his book, "controlled in every look and action by the aspect of authority, and his whole nature put under a discipline of repressions and restraint," but be kept at useful and *pleasing* employment.

"Variety is the spice of life"; and with children, it can be made to afford a *spice* more exciting than even their accustomed play.\* "He is the successful Teacher," says PAGE, "who can excite and maintain the necessary interest."† As said in a succeeding chapter, the order of exercises must depend upon circumstances. A Teacher who understands his profession, can regulate his own school. PAGE says, in his *Theory and Practice of Teaching*: "The circumstances of schools will be found to vary so widely, that no model, however perfect in itself, would answer for all. The Teacher must exercise his own ingenuity and judgment, to meet his own wants."

But first, make your school house and grounds agreeable, pleasing and attractive; and the task of making the studies within attractive, will be more easy.‡ We extract the following remarks from an article in the *Pa. School Journal*, by the lamented D. S. KIEFFER, of Lancaster county:

"Four years ago, I commenced teaching in what is called the 'Sand-stone School-house,' in Strasburg Township—a desolate, uninviting, prison-looking tenement, with nothing to protect it from the heat of summer, or the cold of winter. I proposed to the children, the improvement of our house and

\* Health, however, demands physical exercise. Pupils should not only be permitted to exercise, but encouraged.

† Drawing and Music are exercises which will interest the dullest pupils, and which the whole school can take part in. Drawing may be done on the blackboard, slate, paper, or even on the floor. Any Teacher can draw a rough picture of a house, a tree or some familiar object, which the pupil will endeavor to imitate. Think not the time thus spent, lost.

‡ I once taught in an old, dark school-house, which we were accustomed to leave every pleasant day and meet in an adjoining wood.



grounds by subscription. The proposal was acceded to with alacrity, and being seconded by the parents, was soon put into execution. Our grounds were enclosed by a neat fence, the house was whitewashed, inside and outside, and things began to assume a better appearance.

"I then proposed that our enclosure should be converted into a flower garden. The ground was prepared, and every boy and girl brought some kind of tree or bush to be planted, *each to own and cultivate* what he or she brought.

"In season, the fences are festooned with vines, and the paths bordered with flowers, which grow as vigorously, smell as fragrant, look as tasteful, and are preserved as carefully as though planted anywhere else than in the yard of a district school.

"To one who has not had similar experience, it would be difficult to imagine the delightful interest manifested by the children in these simple auxiliaries to their enjoyment.

"While these exterior arrangements were going forward, the interior was being furnished with blackboards, maps, charts, globes, thermometer, clock, library, &c., to facilitate learning."

Let everything connected with the school room be calculated to "inspire the mind with activity and delight." "Let everything be conducive to health and happiness: and promotive of moral, intellectual, and physical comfort." But, above all, let the pupils *play*: play in the open air: for upon it depend much of the "health, cheerfulness and tranquility" of the school room.

The *Popular Educator* contains the following remarks:—"A child who has had the advantage of as much bodily exercise as possible in spacious gardens and fields, until he has reached his seventh year, even if he should not then know a single letter, will soon overtake those who have their heads crammed with book information at an earlier period; and not only overtake them, but outstrip them. And why? Because his mind is in a healthy state, as well as his body. All

judicious instructors of youth are well aware that it will not do to exert the mind too much. What, for instance, does HUMEL say, whose 'Piano-forte school' is one of the ablest productions that ever came under the notice of a musician? He intimates that a very young pupil of delicate organization, and possessing a fine ear, must not be confined to the instrument more than four hours a day.

"Who that has ever given the matter a thought, can imagine, for a moment, that the delicate and marvellous mind of SHAKSPEARE, would have been developed in the way that it has been, if he had at an early age, been crammed with Latin, Greek and Algebra.

"Every parent and teacher should be careful not to tax the time and application of the child beyond his strength. The pupil has an imperative claim to rest, and recreation, and amusement. To deny the play-ground, with its many games, and sports, and leaps, and loud-rising laugh, is to retard the progress of the mind. Much precious time is literally wasted in cramming the memory with words and phrases, which bar the admission of thought, and render application irksome. A mere effort of memory, is not the attainment of knowledge; and words, instead of ideas and facts, make up but a poor capital with which the future man is to carry on the intercourse and pursuits of life."

"To teach successfully, the Teacher should be *educated* in his profession." He should understand the art of teaching.

FRANCIS WAYLAND says: "If there be any such art, as the art of teaching, we ask how it comes to pass that a man shall be considered fully qualified to exercise it without a day's practice, when a similar attempt in any other art would expose him to ridicule."

We will now come to the subject denoted at the head of this Chapter: and, in our opinion, more depends upon the manner of teaching than the order of exercises.

"It is desirable," says F. WAYLAND, "that the pupil should be taught thoroughly; that is, that he should have as exact

and definite a knowledge as possible of the law and of its relations. It is desirable that he be taught *permanently*: that is, that the truth communicated, be so associated with his other knowledge, that the lapse of time will not easily erase it from his memory. It is important also, *in this practical age*, that *no more time be consumed in the process than is absolutely necessary*. He who occupies two years in teaching what might as well be taught in one year, does his pupil a great injury. He not only abstracts from the pupil's acquisition, that year's improvement, but all the knowledge which would have been the fruit of it for the remainder of his life."

How often have we seen pupils, nearly arrived at manhood, who, after having *gone to school* every winter since they were old enough to attend school, and during their earlier years, both summer and winter, had learned nothing but to be miserable scholars, who neither knew how to spell, read, write nor cast accounts?

Now, the quickest way to do anything is to do it right.—Better spend the whole time in teaching the elements, than to advance the pupil before he is acquainted with them; for without them, he can effectually learn nothing; and no time can be gained by attempting to pass on without them. If he cannot learn the elements he can learn nothing else. But have patience. "Patience and perseverance work miracles." When at length he has mastered the elements, he *goes ahead* as if by magic: and the time apparently lost is repaid a hundred fold.

Let reviews be frequent. "What is understood to-day, may with pleasure be reviewed to-morrow." But keep in view that "to teach a child his A, B, C, is not to educate him."

JAMES G. CARTER says: "In vain you put into the head of the child the elements of all the sciences; in vain will you flatter yourselves that you have made him understand them. If there has been no endeavor to develope his faculties by continual, yet moderate exercise suited to the weak state of

the organs, if no care has been taken to preserve their just balance, so that no one may be greatly improved at the expense of the rest, your child will have neither genius nor capacity; he will not think for himself, he will judge only after others; he will have neither taste, nor intelligence, nor nice apprehension; he will be fit for nothing great nor profound; always superficial; learned, perhaps in appearance, but never original, and perpetually embarrassed whenever he is put out of the beaten track; he will live only by his memory, which has been diligently cultivated; and all his other facilities will remain, as it were, extinct or torpid."

Better that the pupil should leave school, a thinking being with his faculties fully developed, than to be profoundly skilled in the depths of learning, and be "a learned dunce." In the language of PAGE, "let the pupil's mind be *waked up*." Create an interest in his studies. This is the grand point. He who can do this, can make his pupils study. But how, some may ask, is this interest to be excited? Let the Teacher himself be interested, and he will soon find that his pupils are interested. As the Teacher who governs himself, finds no difficulty in governing his school, which, as it were, governs itself, so if the Teacher be not idle, neither will be his pupils.

Much has been said by writers on education respecting the order of exercises, classification of pupils, &c., &c., all very good. I, however, intend to dwell more particularly upon the methods of teaching the various branches taught in the school room, leaving the classification and arrangement of the school to the judgment of the Teacher.

Make a pupil understand what he is doing. A child will not even play without a motive. I once heard of a man in search of work, who was given the task of turning the empty grindstone: and though well paid, he soon tired, and gave up his job. So with the pupil who conns lessons without meaning: and who knows not what he is doing. He should be



treated as a reasonable being, and be required to do nothing without a motive, which he understands.

Mr. CARTER "once knew a child, who, the first day he entered the school, was assigned the first seven letters of the alphabet, and sent to his seat to learn his lesson. Do you think it strange," he says, "that he found it difficult to confine his attention to his book?"

To learn, a child must love his studies, and to love them, he must understand them; and if he understands them, it is not a difficult task to make him love them. If he becomes wearied, change the exercise. Let him play, or sing, or in some way relieve the monotony: and he will renew his study with fresh vigor.

F. J. GRUND says: "Children the most unlike are often put together in the same class, and have to learn, each day, a fixed portion of one science or another, and the test of their acquirements is a verbal recitation from a book. The memory is charged with the crudest and most heterogeneous conceptions, without allowing the mind the least respite, to assort and adjust them, much less the time which it need to reflect upon them. Thus, from the first moment the boy goes to school, until the young man leaves college, he is harrassed and haunted with studies for which he has no spirit or inclination: and it is a wonder if his mental powers are not prostrated or destroyed."

"The belief is yet too common among parents," says the same author, "that education consists in learning and applying certain dogmatical rules, without caring for their being understood." Even the most enlightened seem pleased that their children "*are through the book.*" The more branches that are crammed into the mind, or pretended to be, the better the parents are pleased. The practical teacher is, therefore, necessitated, in some measure, to compromise his principles; and while he takes care to make the child a thinking being, to awaken his faculties, "enable the pupil to acquire knowledge by his own exertions," *he must make the parent believe* that his child has swal-

lowed the book. This confidence must be gained. I once knew a Teacher who, during the first week of his school, heard his reading classes six lessons in the morning, and six in the afternoon of every day in the week. I know not how his plan succeeded, but if he thereby gained the confidence of his patrons, without which he could not teach his pupils, he was excusable for a week's loss to his school.

In fine, the Teacher who would succeed, must enter the school house with the determination to instruct the pupils entrusted to his care; and with this, he need not trouble himself with systems of government, rules of order, or forms of exercises. As to government, it will take care of itself. He who is zealous for the improvement of his scholars, as a parent is for his children; he whose intercourse with them is as free and unreserved, as a father's with his children, needs no rules: he will know nothing of disorder: his school will be governed, for it will govern itself: and he whose school is not thus governed, will experience the difficulty experienced by most Teachers, of "governing too much." He who governs least, mostly governs best; while multitudes of rules, are mostly promotives of disorder. School government, then, being only a "good correspondence between master and scholars," the modes of imparting a knowledge of the various branches of education, (*the modus operandi of the school-room*) seems to be the only requisite to the faithful Teacher. That a Teacher may be faithful to his trust, and be profoundly learned in the sciences which he is to teach, yet deficient in the best methods of imparting that learning to his pupils, is an admitted truth. And, although a skilful teacher will mostly arrive at correct conclusions, and adopt modes of imparting knowledge in his own school more successful than any learned from others; yet what Teacher has not been improved by the experience of others? He who blindly adopts a mode, because it has been successful with another, will not succeed: yet he may from it derive something of lasting benefit to his school. Most successful Teachers although not blindly adopt-

ing any mode of teaching, are yet familiar not only with the best works on education, but the *modus operandi* of their fellow Teachers. What is more beneficial to the young Teacher than "mutual improvement" meetings of Teachers, where each gives his own experience of teaching, school-government, &c., or what more beneficial than mutual visitation of schools? Even from their faults we learn.

Thus, then, while we re-assert that the successful Teacher will not blindly adopt any method untried, and that the methods obtained from a Teacher's own experience, are generally the most successful, yet he who is best acquainted with the modes of others, is generally himself most efficient. From the mass, he selects the best. We, therefore, in the succeeding chapters, will endeavor to describe, not only the experience of a Teacher who thinks it no presumption to say, that he has been, in some degree, successful; but methods of teaching the branches of a common school education practised by some of the best educators of the age: and sanctioned by the highest authority. One thing we insist on throughout, not to place too much dependance upon the arrangements of the books. "The best book on any science needs much aid from the instructor."

"If a Teacher can do no more," says another Teacher, "than repeat the printed questions at the bottom of the text-book, and hear the ready-made answers, he had better quit the business."

"I am of opinion," says PAGE, "that aptness to teach, like aptness to do anything else, is usually an acquired power, based upon a correct knowledge of what is to be done, and some accurate estimate of the fitness of the means used for the end."

Again he asks: "How far shall I assist the pupil, and how far shall the pupil be required to assist himself?" The mode, as explained in the subsequent chapters, is to tell the pupil nothing directly, further than to make him fully understand

what he is at; but always have something to be done by the pupil himself.

Mr. J. P. WICKERSHAM, in vol. II, page 141, *Pa. School Journal*, says: "Make the subject intelligible to your pupils. Not only should the subject be made intelligible to the pupils, but it should be presented in such a form as to be attractive, and to secure attention. An anecdote or story is now and then appropriate; and if a fact in the personal history of any member of the class can be introduced, or some occurrence in every-day life, or, which may have happened about the school room, can be made available (and no lesson need pass without some such allusion) it will never fail to secure attention. In Grammar, sentences can be given in which the names of some of the pupils may be embodied; and in arithmetic, transactions in which they figure as parties; and not unfrequently the careless and intractable may be made to work manfully by some such artifice.

"In hearing a recitation, the Teacher should generally stand—always, if the class is large. It may look *dignified* to sit on a platform or behind a desk, and demurely doll out questions, but surely it is not the best way to interest pupils of any age. Let the Teacher stand in front of his class; and his eyes, his countenance, his gestures, the very motions of his body, all speak, and assist in impressing what his tongue would utter. The effect of an oration would be greatly impaired, if the orator delivered it in a sitting posture; and so the instructions of the Teacher.

"Questions as to the kind of answers required, may be asked in two ways; first, in detail, requiring but a single sentence, or a few sentences, to embrace the answer; second, by subjects embodying many details in one general question.—The former method is probably the most searching, while the latter inculcates broader views of the study, and cultivates to a greater extent the powers of generalization and expression; and both, doubtless, should be practised. \* \* \*

"The written method may be divided into the blackboard



method and the slate method. The oral may be divided into the *turn-about* method, the *selecting-out* method, the *uplifted hand* method, and the *concert* method. \* \* \*

"In the *selecting-out* method, the Teacher gives out the question to the whole class, and after allowing a little time to think, names the answer. By this method, the attention of the whole class is enlisted. All must think at the question, and this alone is worth something. \* \* \*

"The *uplifted hand* method is a modification of the *selecting-out* method, and differs from it only in this, that when the question is put, all that think they can give the correct answer, raise their hands, and from these, the Teacher selects the answerer. It makes a lively recitation, and enables the Teacher to tell, if not deceived, how many are able to answer."

Sometimes the Teacher finds it difficult to fix the pupil's attention to any study. The pupil may be dull in mathematics and grammar, he may feel no interest in them, which the Teacher strives in vain to excite. But he has not touched the right chord. There is a chord to every person's heart which will vibrate, when touched: and which will arouse other emotions which have lain dormant. Cause an interest in one subject, and it will lend an interest to others. I once had a pupil who appeared to be insensible to everything connected with the school room, until near the close of the session, when the preparation for an *exhibition* aroused his energy, and, as his parents declared, "he learned more in three weeks, not only in reading, but in other studies, than he had during the previous part of the session." His interest in a portion of the school exercises, was excited, which was easily transferred to the others. Independent of school exhibitions, which I do not recommend, the Teacher can find something to interest the pupil; drawing, music or even hearing the lessons of the smaller pupil, something to make him think he is good for something. Let him know that he is *good for something*, and you have something to stand on, to work the lever of instruction.

Emulation may, in many cases, excite an interest in study: but it does not always succeed. A judicious Teacher will guard well this principle. That it works well in a class of pupils, with attainments nearly equal, we have experienced: but who has not seen in a class where the few surpassed the others, that the others "fall into hopeless indifference? Who has not seen in a class, where the strife was for head, all but two or three quite as well satisfied with being at the foot?"—Much more might be said respecting the modes of teaching, and the *waking up of mind*,\* but leaving this subject so ably discussed by others, we pass on to the methods of teaching the different branches. Before closing this chapter, I would, however, impress upon the Teacher, the necessity, in the governing of his school, of being *firm*. What mode soever you adopt, *let your word be law*. Be mild, yet firm. A school cannot be a republic. The Teacher must be the monarch, from whose will there is no appeal.

\* See Page's admirable chapter on "Waking up mind."

## CHAPTER II.

### THE TEACHING OF SPELLING, READING, AND THE ALPHABET.

To teach spelling has been considered an arduous task; a labor of many months; and even years. To obtain a thorough knowledge of orthography and ortheopy, is yet a labor of years, and will be until a phonetic system is introduced; but to teach a child to be a tolerable speller, *i. e.* to be able to spell and pronounce with ease and facility, the ordinary words of our language, and to read with fluency in the shortest time, and with the most ease to Teacher and scholar, is the province of the Common School Teacher: and this is what we propose to treat of in this chapter. To be able to write without misspelling ordinary words, and to read ordinary reading, are the primary studies of the School-room. G. F. THAYER, says:

“Numerous as are the innovations in, or (to adopt a more acceptable term) new methods of teaching the various branches of education at the present day, I hold those only to be *improvements*, which present the subject in a more practical form; which will require the least change from the school-method to that to be pursued in the business of life.

“If, then, we look for a moment at the common mode of teaching spelling, viz: to assign one or more columns of words, in a *spelling book*, to be committed to memory, and uttered by the voice, letter by letter; we see one entirely at variance with practical instruction, tedious to the pupil, expensive in time to the instructor, and *never to be used in after life*; of course, one that needs reformation, and in relation to which

almost any change would be an improvement." Again he says:

"The practice once so common of assigning lessons in spelling and defining from the columns of a dictionary is one of the most stupid and useless exercises ever introduced into a school."

Every Teacher who has practiced this mode, can bear testimony that the pupils thus taught, do not remember the definitions; and as the same author says; "even if they could be remembered they would be of doubtful utility; for, as the right application of a definition must depend entirely on the situation of the word to be explained, and the office it performs in a sentence, the repeating of half a score of meanings—as obscure, perhaps, as the word itself—conveys no definite thought, and serves rather to darken, than illuminate the mind."

How often have the feelings of the Teacher been mortified by the practical spelling of the *best spellers* of his school.—How often do we see a boy who can spell (*off the book*) every word in the spelling book, unable to write a letter without mis-spelling half the words?

Of this important branch of education, WM. RUSSEL lays down the following primary rules:\*

"Every exertion should be made to render the school-room, and the school furniture, conducive to health and comfort.

"The school exercises should be often varied, and the attitude of the children, frequently changed.

"Motion at short intervals, should be a part of regular school exercises.

"The school should be ruled by *management*, rather than *government*.

"A mild, affectionate and judicious treatment of individuals should be substituted for general laws and penalties.

\* These remarks more properly belong to Chapter 1st, but as they have particular reference to "primary schools" we introduce them in this Chapter.

“Conscience, judgment, affection, sympathy, and not fear, should be employed, as means of moral influence.

“Lessons should be very short, as well as simple; and strictly adapted to the powers and capacities of the pupils: and nothing taught to be understood by and by.”

I repeat, let the children play. Nature demands it: health demands it. You can teach more in the interim, than in the whole time. Their minds will be invigorated; they will learn faster; and finding that they learn, they will love learning, and learn faster still.

I will now give a few gleanings from my own experience; and also from others who have given their experience to the world, in the teaching of this most important branch of education: but it is to be regretted that so few Teachers have thought this subject worthy of much notice.

The words of the reading lessons, which contain the most common words, and, therefore, the most useful,\* are among the child's first spelling lessons. As to the primary books, there is so great a variety, that it is next to impossible to make a choice, but the Teacher cannot go amiss, if he be careful to select easy sentences, and pleasing to the pupil. I never found any sentences more pleasing to the pupil than the following from Bonsal's edition of Comly's spelling book:

“We had a red cow and a fat pig.”

“The boy cut his lip on the ice.”

As to the lines of spelling composed of long difficult words, they may be left until the pupil can spell, read and write, with tolerable facility the most common, simple, and consequently most useful words. As the pupil advances, the principles of reading should be attended to. The pupil should never be allowed to sing or drawl his words; and until he can put his words together correctly and understandingly, which is reading, let him continue to spell mentally:—which is not read-

\* Professor THOMSON, of Pittsburg, once remarked, that it would be better to burn the spelling books than to use them merely to teach the child words, instead of ideas.



ing.\* One point must be carefully observed, and that is a clear, full and distinct articulation. As Dr. AUSTIN says, "Every word should be delivered from the lips as beautiful coins newly issued from the mint, deeply and accurately impressed, neatly struck by the proper organs, distinct, in due succession, and of due weight." As Dr. COMSTOCK says: "Without good articulation it is impossible to be a correct reader."

As soon as the pupil can write, put him to writing his own composition; which will, of course, be composed of easy words. Writing by dictation, is a valuable exercise, one pupil correcting the errors of the others. Such exercises as

"What can *ail* our friend Thomas."

"He has drank too much *ale*."

"The *air* was pleasant."

"He was sole *heir* to the property,"

from NORTHEED'S "Dictation Exercises," are very useful.—The pupil may write them on a slate: then copy them off on paper, and carry them home at night for correction by the aid of the dictionary: to be returned next morning for the Teacher's inspection. This exercise teaches them to spell, to write, and to think. This is to improve his knowledge of spelling. The idea that a child must not be put to reading until he is a good speller, is now nearly abandoned by Teachers.

† The whole art of teaching reading, is to teach the child to be natural. From wrong training in the early studies many children have imbibed a "school boy drawl"; some a habit of cutting off or swallowing many of their words," &c., &c. These errors may be corrected by the Teacher's example. In reading,

\* The mere *calling of words* is not *reading*. It may be called "*mental spelling*." This may be practiced in various modes. "*Word about*" (as the pupil calls it) or the speaking singly, by each pupil, a word in turn, is a very efficient mode. This is different from spelling aloud the reading lessons which is also very effective in teaching words. I was once asked by a visitor, how I prevented my pupils from learning to drawl, when practicing this *word about* exercise? I answered, that as no principle of *reading* is involved in it, but merely *mental spelling* or *word making*, I require them to pronounce every word in the falling inflection.

† Pa. School Journal.

much is learned by imitation. I have always found that a child taught to read his school books correctly, without rule, by imitation alone, will read correctly in other books. True, to read well, he must understand his subject; although, all who understand are not good readers. But to be natural in his reading, i. e. to use the correct tones and inflections of the voice, will teach him to understand what he reads: and this can be learned by imitation. I never saw a child whose reading was natural, no matter by what process taught, that did not understand what he read, unless it was above his comprehension.

The voice of the Teacher is the best thing, in my experience, to teach a correct style. A Teacher who does not read much, and often, to his pupils, is not often successful. For how is he to teach the intonations of the voice, inflections, emphasis, &c., without that which reaches the pupil's ears?—Of what use is it, to tell a child that A has four sounds, E two sounds, without teaching him what those sounds are?—No sound can be learned but by imitation. Can a Teacher teach the sounds of music, without giving those sounds to the pupil's ear? No. Neither can he the sounds of the reading voice. Where is there a more beautiful and appropriate collection of rules for the reader, than in Murray's "English Reader"? Yet I have never seen the pupil who could practice them, without their practical illustration by the Teacher's voice. The pupil must be able to speak, distinctly, every elementary sound of the language

\* "He should be required to pronounce, clearly and distinctly, A<sup>1</sup>, A<sup>2</sup>, A<sup>3</sup>, A<sup>4</sup>, and every other elementary sound: and in reading, to distinctly enunciate *every sound* of every word.

"The *elements* should be sounded by the pupils, daily; and in every variety of pitch and force, to strengthen the vocal organs, and to improve the pupil in the intonations of voice. Even the postures of mouth should be attended to."

\* Report of Committee of State Association.

Correct tones, inflections, modulation, emphasis, &c. are better taught by the Teacher's voice than by any rules.

My\* method of securing attention, is to commence at any part of the class, without regard to "head" or "foot." The pupil reads until the Teacher says "next;" when the next in turn commences at the exact word, (or part of a word) where the former ceased, or forfeits his place in the class. One word from the exact place in the book, which may be lost by one look from the lesson, detects the careless scholar. If this fails to secure a thorough attention (as it sometimes does, when the class is large) the Teacher, instead of calling "next"—calls "John," "James," "Susan," or by numbers, promiscuously, without regard to his or her position in the class: each one knowing neither *when* nor *where* he may be called upon to read. If this fails, the Teacher keeps a watchful eye on the class: and the instant he sees an eye wander from the book, the name is called. If it is necessary (as it sometimes happens to be) to attend to another class, during this exercise, the readers cannot abate their attention: each one not knowing when he may be called upon, although but one may continue to read during the time the Teacher is engaged. Sometimes a touch on the shoulder with the finger is a signal to the reader to stop, and a similar tap, a sign for another to proceed. This is the most effectual method of securing the attention of the habitually inattentive; as it deprives any one of an opportunity of catching the last word that is sometimes inadvertently dropped by the reader after the call of another name.

The advantages of these methods, are :

First, It secures a constant attention to every word; as an omission for a single instant to look at the lesson, is liable to detection. True, a system of what is called, in the school-room vocabulary "trapping," may have the same effect with some: for others, nothing is wanting but their own ambition: but all Teachers know that such are "few and far between;" and

\* Pa. School Journal.



that for those not well acquainted with words, nothing but the most rigid exactness in requiring their attention, and their whole attention to the lesson, can be made available. And how is this attention to be secured? The diligent pupil, as before said, needs not such discipline. But, all Teachers know that many pupils, even in the higher classes, though familiar with words, are very inattentive to their reading lessons, trusting to that familiarity to enable them under ordinary circumstances, to be ready in turn, to read their part. But, the system described, compels even the best to be watchful: as he may, in an unlooked-for moment, be called upon; and, one glance from the book, may cost him his place. On the contrary, in reading by verses, paragraphs, or even indefinite portions in regular order, he looks not at his book until his time arrives; but with finger on his place, he stands, idly awaiting that time, without seeing a word read by the others. When, at length, a dozen or more have drawled through their parts, he reads his part, counts the verses ahead, and again awaits his turn. I do not say that, with the watchful Teacher, this *must* be the result even of the latter mode, but it is certain that with the former, the pupil cannot, under any circumstances, neglect the lesson with impunity.

This method is also practiced in spelling. I sometimes stop the pupil before the word is finished, giving the signal to another to proceed from where the former ceased: precisely, even to the letter.

True, this method is tiresome to both Teacher and pupil; and probably keeps the mental powers of the child too much on the rack of exertion; but, as a recompense for their attention, (instead of being sent to their seats, there to sit in unmeaning stillness, with vacant eyes fixed upon their books,) they are given the largest liberty, short of disturbing the school, when the recitation is finished.

My\* mode of teaching the alphabet, is to teach it in con-

\* Pennsylvania School Journal.

nexion with words. I sometimes commence it with four or five easy syllables as ab-di-ca-tion, or easy monosyllables, as *dog, cat, pig, &c.*, and teach thoroughly, every letter in these words: also the pronounciation of every word and every syllable. Thus learning the letters as he learns to spell, the child soon learns not only his letters, but many words in as short a time as with a previous knowledge of the alphabet: thus saving the time usually spent in teaching it.

This has been my plan for years; and it superceeds the use of the regular alphabet; as words and letters are taught in less time, and more easily (when taught together) than the alphabet alone.

True, meddling parents sometimes object, and "*wonder how the teacher is to larn the child to spell before he larns him his A, B, C's*—and persist in sending primers in spite of the Teacher's orders. But, mind them not: persevere, and you will come out right in the end.

One of my pupils, a little boy, having been taught in this way, in spite of almost daily orders to put him at the beginning of the book, his papa concluded, as a last resort, to go to the school, and give the Teacher a lecture on teaching. But, thinking that he might as well first try his boy, and finding him good at the alphabet, he put him at b-a-ba's and so on to two syllables; when he was content to indefinitely postpone his intended visit. This I afterwards learned from himself.—The next morning after this discovery by the parent, the little boy (who had also made the same discovery,) came to his Teacher, his eyes sparkling with joy, saying—"Mr. Lamborn, I can spell in b-a-ba, and nobody ever taught me."

When the alphabet is sufficiently known, the pupil is transferred to the second class in spelling: which is practiced in a manner similar to the mode of teaching reading, already described. Each pupil is required to spell until the signal to stop; which may be at the end of one, two, or three, or more words, or in the middle of a word. Another then goes on,

commencing where the former left off (exactly at the very letter,) and so on promiscuously through the class. The backward pupils are thus given an opportunity of an extra portion of instruction: while all are compelled to be attentive, or forfeit the place. Attentiveness thus becomes a habit; and whether the pupils spell promiscuously, or in regular *class rotation*, they are equally attentive. Not knowing when he may be called on, each pupil finds it necessary to be attentive under all circumstances.

I find, in my experience, that a child accustomed to attention in one class, is mostly attentive in others. But, fellow Teachers, perhaps the better mode would be to interest a child in his learning: better than to "hire, punish, or persuade, or even to excite emulation;" yet to interest a *child* in the mere spelling of words, by any other mode than a spirit of emulation, seems to be attended with difficulty.

I once had two boys who did not know a letter, entrusted to my care, to be taught for a stipulated sum, to read and write in a month. They were taught in the time. True, their knowledge was merely mechanical. Their writing was a mere scrawl of their names: nothing more. I give not this example as a correct mode of teaching, but of what may be done by a purely mechanical and forcing process. In this case, my system was beneficial; for who will say that it was not beneficial to the poor boys? Ay, it was. They were old enough to know that it was the only schooling they would ever receive: and they improved the *little all* that had been given them.

I wish to be understood that I consider the only advantage gained by putting a pupil at once to words of five syllables, is that he obtains a knowledge of the whole word in as short a time as the separate syllables alone; as the pupil is required to pronounce each syllable clearly and distinctly. I do not contend for this mode: it is mine. I have succeeded with it.—Perhaps it would be better to put him to the reading lessons first: but I would never teach the alphabet unconnected with

words. By the mode I have described a pupil of ordinary talent, can be taught (including the letters) to read easy reading in four weeks. I however keep him at these *spelling lessons* only until he has learned a few letters and acquired some idea of forming words: when I put him to words of easy reading lessons.\* Either mode is better than the b-a-ba, b-l-a bla system: for with the same knowledge of these detached syllables, he has that of the whole word.

Much has been said about educating the faculties, and in the last chapter, the views of several distinguished Teachers are given respecting the true method of educating a child, but to the practical Teacher in this practical age, a mode of teaching the child to *spell and read* as soon as possible seems to be the desideratum. "It is the dictate of common sense," says Mr. PAGE, "to take human nature as it is, and is likely to be for some time to come. Human nature is far from being perfect; and, I am sorry to say, that the parents of our children, often exhibit it in no flattering light."

†Although to educate the child's faculties, to make him a thinking being, to "*wake up his mind*," is doubtless the "*more excellent way*;" yet the mode of doing it the way a child is taught to think, how to place the mental food within his reach, so as to render it most attractive, in short, the *practical teaching* of the "young idea," seems to be the difficulty, and one which the practical Teacher of the primary school, alone knows anything about. To interest a child in his play-things is not a difficult task. Neither is it difficult to interest him in the development of his own mind.

"Delightful task," (says the Poet) "to rear the youthful mind."

\* An advantage of this mode is, that the pupil is more interested in learning to spell words which he understands, as dog, cow, pig, &c., and consequently learns both the letter and the orthography sooner than in other words. He may also be taught a few articles, verbs, &c., so as to make a sentence, as—"the dog, the pig, and the cow are fed"—when he may make a first attempt at reading. This is still more interesting to him, and adds a further impetus to his learning.

† Pennsylvania School Journal.

“Delightful task” too, to teach the higher branches: neither is it difficult to make them interesting to the student.

But to make A B C interesting to the child appears to be a *desideratum*. It is that which is demanded: it is that which you have to do: and which it is your interest, Fellow Teachers, to learn to do in *the shortest time*, and with the most ease to yourself and pupils.

I once taught a school, in which were too little boys; one, a regular pupil, the child of a neighbor, and the other a voluntary pupil. The latter, when prevented from attending the school, cried to come; and when there, none but the Teacher could remove him without force. The former also cried to come to school on the first day; but in a week, cried to stay at home. Why? Because, as he said, “the long lessons tired him.” The latter, a remarkably active, lively boy, continued to like the school, and so well that he would willingly sit in quietness during several hours each day, rather than leave the school. He is sometimes *permitted* to say a *lesson*. The former was a book drudge, the latter would have become a *thinker*.

At different times during my teaching, I had two little girls given to my care. They commenced their studies, as the little boy, spoken of; and in two years, were better scholars (even book scholars) than any others ever taught by me in the same time.

I throw out these facts as hints of the true principle of “training the young idea;” as practical Teachers, we are arrested on the threshold by parents, who try their children by the book.

Who has not heard the complaint, “My child has gone to school so long, and doesn’t know his letters.

We dare not often trust our reputation, and interest as Teachers, with our most liberal patrons. They judge, not by what the child knows but by the words he knows in the book. All that he knows besides his book knowledge, is attributed to his own natural talent: and the Teacher is the more liable to censure, for not teaching so promising a child. Better for



the reputation of the Teacher that he cramp every energy of the child, except that which is bent, from morning till night, over an unmeaning book lesson: for the dullness of the child, is not attributed to the Teacher, who rather receives additional praise for teaching one so unapt.

But, even A B C can be made interesting, and taught without cramping the powers of the child. We need no forcing system, even in this most uninteresting of all studies.—Much better to let the child play three-fourths of the time; he will learn more in the remaining fourth than in confinement for hours in succession, “enduring an irksome restraint,” the whole time. The child should love his school; ay, even his A B C.

We should reject the forcing system,

First, because it injures the child.

Second, because it is the slowest way.

Do not fear that you cannot make him interested in his first studies. He may even so love them, as to be necessary to curb him.

The greatest punishment inflicted on the little girls mentioned (besides sending them from the school-room) was to deprive them of their books.

Now, with such an interest, could not the first studies spoken of, be taught in connexion with the training of the “young idea?” If so, we have gained a new point in the science of education. The only danger seems to be, that by creating too great an interest, we overtask his faculties and tax too much the mental powers of the child.

But, be that as it may, we must satisfy the parents. The public mind is not ripe for throwing away the child’s A, B, C. Those who acknowledge the theory, measure the Teacher’s qualifications by a different rule. We know what our patrons expect of us: and we know that a Teacher who can teach a child to spell and to read (*i.e. to say words*) in the shortest time, will receive the best support: and we must meet the

emergency.\* To do this with the least injury to the child mentally and physically, seems, therefore, to be the duty of the Teacher: and the mode described seems to have this property: always keeping in view—plenty of play! plenty of physical exercise! It is less irksome to the child, and less troublesome to the Teacher: and the pupil learns much more (even book learning) than by the confining method.†

But, to proceed, Mr. THAYER says: “The pupil may be required to define such words from his reading lesson, as may be given to him, and subsequently to write them on a slate for a spelling lesson: if he be directed to write the *meaning* also, so much the better will it be for his progress in the language. The pupil may also be permitted to paraphrase his reading lesson, in his own language, according to his understanding of it; by which the Teacher can ascertain whether he had a correct idea of the subject, as well as individual words. The Teacher may thus lay the foundation of the pupil’s style in composition. This exercise, will be found to be a very agreeable one to the pupil, who now may be permitted to use the dictionary. The Teacher may also mark in the reading lesson, such words as he deems most suitable and useful, and let the pupil search in his dictionary for such words as can be substituted for them, without changing the import of the lesson. This practice continued for a while, prepares the scholar for reading with unhesitating fluency.”

I have found much advantage to be derived from requiring

\* I have now in my mind’s eye, a Teacher of the first class, (*A*, No. 1.) who, to use a common phrase of his patrons, “*has the smartest set of scholars, but he can’t make anything out of them.*” They are “*smart.*” Ay, who made them “*smart?*” “Why, my little boy went to him six months, and didn’t learn a letter.” “Why do you keep him?” suggested a friend. “Oh, the scholars like him so well,” was the reply.

“He didn’t learn a letter?” This is the kind of learning that is appreciated, and until the parents themselves are educated, is the kind we must learn to teach.

† A lady once placed a little girl of five years old under my care, with a charge to not “*push her too much, but let her play a good deal.*” By obeying her orders, the child learned the faster,—and the mother was not displeased.

the pupil to use the words he has defined, in his own compositions.

To conclude: Every Teacher must use his own experience and *common sense*. And so long as the Teacher has at *heart* the improvement of his pupils, he will continue to improve in the "*delightful task*" of teaching the youthful mind.



## CHAPTER III.

### THE TEACHING OF GRAMMAR.

GRAMMAR\* is the most difficult study of the common school room. Those, accustomed to teach only the more advanced pupils, know but little of the difficulties of teaching the elements of language to children. Those who teach alone by the book, and the memorizing of rules, also know but little about it. To teach the elements of language to children, is not a trifling task. If, however, the right commencement is made, much labor is saved.†

First, "teach one thing at a time, and be sure that one thing is learned, before another is attempted." This rule, so necessary in other studies, is particularly necessary in the study of Grammar.

"By the old fashioned method of teaching Grammar, the pupil was required to commit the Grammar to memory without understanding it at all, or being expected to understand it, and then put to parsing all parts of speech at once."

The Teacher's success in teaching Grammar, is, we believe, mainly dependent upon this one principle—"Teach one thing at a time."

\* By Grammar, is meant English Grammar; that being the only Grammar belonging to the Common School.

† "Tower's Elements of Grammar" is an incomparable work for beginners. By its use the pupil acquires a knowledge of the principles of language before he commences the study of rules which he cannot understand, and prepares his mind for greater difficulties.

Mr. COLBURN says: "I have had scholars, who had learned their Grammar before they came under my care, so as to repeat it by heart: yet, in parsing the word *him*, would call it in the nominative case, and still persist in doing so, after being required to decline it five or six times in succession.— Arithmetic or any other subject furnishes examples enough of the difficulty of making scholars attend to the sense sufficiently to understand a rule or principle, when they have first committed it, without understanding it. But Grammar, perhaps, affords the most striking instances of it."

At a public examination of my pupils, at which were several distinguished Teachers, I requested that some of those present should examine a class in grammar, which had just concluded its exercises; when the following question was given: "Notwithstanding his poverty, he was the delight of his friends."

This being an example near the beginning of Smith's Grammar, (the text book used in my school,) was given as one which any child acquainted with the elements of grammar should answer. The class, though tolerably proficient in grammar, hesitated: but after a few seconds of thought, it was parsed.

"*Notwithstanding*, a preposition, &c." "The word *notwithstanding*," I remarked, "is a word difficult to parse; the relation of the words shown by it, being somewhat obscure; and resembling a conjunction in its relation to the sentence."

"It is in the list of prepositions," was the reply.

"That may be," I answered, but my pupils are not familiar with *lists*; they parse by *principle*."

"But it is a fair example, being selected from the parsing exercises of Smith's Grammar."

"Certainly," I replied, "the example is not at all unfair; I only offer these remarks to *define the position* of my pupils.— They are considered by their Teacher, well taught in the rudiments of grammar without regard to the order of the book, or

lists of words. If they have ever parsed that sentence, they have probably not fully understood it; and consequently have not remembered the form. Had they learned by the order of the book, and known the list of prepositions, to not know that the word just parsed, is a preposition, would be a defect: but in the present case, the defect would have been, to call it a preposition merely from memory: and a much greater error than to say *I don't know, I can't analyze it*. As it is now parsed, the sentence is evidently understood."

But, to proceed,—we will begin first, with the noun. Teach the pupil to understand that the name of every thing is a noun, and keep him at nouns until he is fully acquainted with them. Sometimes he will parse as nouns, words signifying quality or action: as the word *good*.

"Well," says the Teacher, "what is a noun?"

Ans.—"A noun is a name."

"Name of what! a person, place or thing?"

Ans.—"Of either."

"Well, is the word *good* in your sentence, the name of a person?"

Ans.—"No, sir."

"Is it the name of a place?"

Ans.—"No, sir."

"What is it the name of? a thing?"

Ans.—"No, sir."

"Then it is not a noun."

Sometimes the pupil will answer, "it is the name of a thing."

"Well, what kind of thing? Did you ever see one?—What is it like?"

Ans.—"Yes sir, a good apple."

"You may see the apple; but it is the *good* that we are talking of: it is a *thing* of some kind whose name is *good*: not a *good thing*." Continue in this manner, until he is convinced that *good* is a word describing something, but not the *name* of the thing.\* So with other words. Sometimes he will call a

\*Note these words, and when he is at adjectives, remind him of them—they will assist him in understanding the nature of adjectives. So with verbs.

verb, as *to write*, a noun; when the Teacher may proceed in the same manner as before. What kind of a thing is a *write*?" &c., &c.

When the noun is fully understood, the pupil may commence with adjectives. Select the most simple adjectives, as sweet, sour, black, white, &c., qualities fully understood by the pupil. As he proceeds, he will make mistakes; as "*strike*—an adjective, belonging to *man*," in the sentence—"I strike the man."

"Well," says the Teacher, "what kind of man?"

"Don't know."

"Did'nt you describe the man?"

"No, sir."

"What does an adjective do?"

"Describe."

"Then *strike*, being an adjective, must describe the man.—What kind of a man is a strike man?"

"Does it mean a *large* man, a *small* man, or—what kind of a man?"

"It does'nt say what kind."

"Well, what does it say?"

"Why—it says, *I strike\* the man*."

"Then, as *strike* does not describe the man, it is not an adjective."

Sometimes he guesses, as "*though*, an adjective." In such cases dismiss him for the present. For in no case must we permit the pupil to guess. And that he guesses, or knows nothing of the nature of an adjective, is evident. So proceed, until the adjective is understood.

Next comes the verb. "A verb signifies to do.† If I *strike* a man, I do something, what then is the word *strike*?"

"A verb."

The Teacher should be careful to tell the pupil directly only as a last resort, and when the pupil *will not think*. Every

\* Let the Teacher take note of this, to use when he comes to verbs.

† Neuter and passive verbs may be omitted at this time.

thing short of direct assistance may be given, but, as PAGE says, "let the pupil achieve the final victory." Leave something for himself to do; and be it ever so little, he will feel a satisfaction in discovering it himself. He should now be referred back to the adjective *strike*. Suppose the pupil parse the word *happy* in the sentence;—"He is happy," as a verb;\* let the Teacher, recur again to the verb, *to strike*. He knows that *strike* is a verb, because it is *to act*,—*to do*. "Well," says the Teacher, "does *to happy* mean to do? In what manner do you happy a person. You know how to strike a person, I suppose; how would you happy him?"

Let the Teacher conjugate it thus—

{	"I happy, You happy, or thou happiest, He happies."
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and if the pupil has not mind enough, or it is not *waked up* sufficiently to see the absurdity, his Teacher has not done much for him. Having convinced him that *happy* is not a verb, let him understand that he is a happy man, and if he does not know that *happy* describes the man, there is room for doubt respecting his knowledge of adjectives.

The precise order of teaching number, person, gender and case, the moods, tenses, &c., the other parts of speech and their sub-divisions, together with their various relations, must be left mainly to the judgment of the Teacher. Even after the pupil has advanced beyond the rudiments, he sometimes calls words, nouns which are not names. In my experience I find it profitable sometimes to render the pupil's parsing ridiculous, even to himself. Thus when he parses such a word as *virtuous*, a noun, I let him proceed through person, number, gender, &c.

"How do you know it is masculine gender?" the Teacher asks.

"Because," answers the pupil, "it is a male."

\* These exercises the Teacher will perceive are in accordance with the common system of Grammar: they are, however, applicable to all.

"How do you know? Did you ever see one?" "One what?" asks the pupil.

"A virtuous," answers the Teacher.

"I've seen a virtuous *man*," continues the pupil.

"Man!" echoes the Teacher, "is that the word we are parsing? Did you ever see or hear of a virtuous?"

The following example occurred in my school to-day, and while it is fresh in my memory, I record it.

"*The dinner waits, and we are tired.*"

"Tired, a noun of the third person, singular number, neuter gender."

"Why is it neuter gender?"

"Because it is neither male nor female?"

"How do you know it is neither male nor female?"

"I know it," repeated the pupil with confidence.

"How do you know it? Did you ever see one? Is *tired* the name of any thing? If it is, please to describe it."

"Well," persisted the pupil, it is certainly neuter gender."

"That it is *no* gender," said the Teacher, "is true, but you say it is a *thing* of the neuter gender, a thing called a *tired*, a *thing* which neither you nor I, nor any person ever heard of."

Frequently the pupil will parse such words as *love* a *noun*, when it denotes action, and a *verb*, when it is a *name*, for want of fully attending to the sense, or more properly for want of *thinking*. The remedy in such cases, is to *wake up his mind*, make him THINK.

By teaching thoroughly as you proceed, the intellect of the pupil must be dull, if he obtains not a tolerable knowledge of the *principles* or elements of Grammar.

That pupils are not taught more thoroughly, is, probably often owing to the Teacher's own deficiency. Many Teachers do not possess more than the *elements*, themselves; and of those who do, how few speak correctly in their conversation! To teach his pupils Grammar, a Teacher should be not only a pattern of correct conversation, himself, but he should notice every violation of correct language that he witnesses amongst



his pupils, either in their writing or speaking. Avoid all *cant phrases*, and provincialisms. I once heard the Principal of a flourishing Academy—a Teacher of ancient and modern languages use the following language:

“A whole *parcel* of my scholars once *ran off* to ——— and *got* into mischief.” After describing the mischief, &c., he proceeded—“But I *found them out*; and I *guess* I *learned* them better than to *get* into such a scrape again.”

Now, this sentence can be parsed according to the rules of Grammar. It violates no special rule of syntax, except in the word *got*. *Parcel* is the subject of the verb *ran*, and *whole* is an adjective, describing it. This *parcel*, (not a part of a *parcel*, but the *whole parcel*) *ran off* of something. He *learned*, not *taught* them, &c.; *to get* is a transitive verb denoting to procure, to obtain, &c., but its general use as an intransitive verb may sanction this corruption.

A Teacher who uses such language as the following to his pupils, is unfit to be in a school-house, except to *learn*:

“Joseph I know you *done* it, I *seen* you do it, and I have often *saw* you do it. Now *set* up, and write your copy. Have you *wrote* a copy to-day?”

It is hardly necessary to speak of those who habitually violate the ordinary rules for the government and agreement of nouns and verbs. They had—“better ta'en up spades and shoals, ———or knappin hammers.”

The office of Grammar is to teach us to speak and write correctly, to arrange words and sentences with propriety, and not merely to know to what parts of speech they belong according to a particular system of Grammar. Thus, the word *but* as *except*, is by some called a conjunction, and by others—a preposition. But whether a preposition or a conjunction, it is of but little consequence, if he fully understands its import, so long as the best writers disagree as to its name. It is enough for the pupil to fully comprehend the distinctions of *BUT little is done, John may go BUT you must stay, and all BUT you may go*. If *but* in the last sentence is called a conjunction, he will



see that its relation to the pronoun *you* which follows it, is very different from the relation of the real conjunction *but* to the pronoun *you*, in the second sentence. No matter from what word or words it may have been derived, it, as now used, has a different meaning. If called a *preposition* he will see that it does not show that relation to words that prepositions usually do; yet as the nature of its government seems to require the objective case to follow it, as *except him, excepting, or leaving out him*, its name is of but little importance. If, in accordance with the views of some writers, the nominative case should follow it, it must be parsed a conjunction. Custom, however, (or what is called *good usage*) which gives law to language, decides all such disputes.

The definitions\* of the various parts of speech, their numbers, persons, genders, moods, tenses, &c., should not be learned by the pupil until he understands these divisions without their names. No matter what may be the system taught, whether CARDELL'S with three parts of speech, or MURRAY'S with ten; no matter whether 3 tenses or 6; the same divisions of our language exist, and *must be taught*, no matter what may be their names, and much better without the written definitions than with them.† As no pupil can understand a definition without its application, it is better to teach the application first, and afterwards the definition.‡ But the rules for the arrangement, agreement and government of words, being wholly arbitrary, not being founded on any principle, must be committed to memory, and committed well.§ “*An active transi-*

\* The same should be observed with the definitions and rules of arithmetic.

† As to the different systems I recommend none. Every Teacher should judge for himself. “*Green's Analysis*” is an excellent work.

‡ SMITH'S mode in the beginning of his work, is very good.

§ It is said by some that “Grammar should be taught upon the *principles* of language, and the meaning of words, instead of mere rules, founded on no correct principle of language.” This would be true, if the grammarian's “province were to give law to language,” but as it is an admitted fact that the grammarian's province is only to teach the language in accordance with the sanction of good usage, i. e. good, general, reputable usage, and that the rules which govern it, and which *we must teach*, are binding upon us, we, as practical Teachers, must teach it as it is.

*tive verb governs in the objective case,*" not as a rule of mathematics, but because *it does*: because the *book says so*, upon the authority of good usage. Therefore, as no reason why *him* should not be *he*, can be given, but an arbitrary rule without reason, it is absolutely necessary that the rule be impressed upon his memory.\* The time when these rules are committed depends upon the system of teaching.

I will close this Chapter with a few practical examples from the experience of the School room.

#### PRACTICAL EXAMPLES.

*Pupil.*—" *Is* is a neuter verb."

*Teacher.*—" Why is it a neuter verb?"

*P.*—" Because it does not express action, but simply being."

*P.*—" *Sit* is a neuter verb."

*T.*—" Why is it a neuter verb?"

*P.*—" Because it denotes simply being."

*T.*—" When you *sit* on the chair, do you not *act* to keep yourself in a sitting posture?"

*P.*—" No sir."

*T.*—" If you were to faint or sleep, would you still *sit*?"

*P.*—" No sir, I would fall."

*T.*—" Then, you use *action* to *sit* on the chair?"

*P.*—" Yes sir."

*T.*—" And to *stand* on the floor?"

*P.*—" Yes sir."

*T.*—" How then is *sit* a neuter verb?"

*P.*—" I don't know. I suppose it is merely so called."

"That is a good idea," continued the Teacher, "names are unimportant: and whether we call all verbs active, as CARDELL, (who is compelled to make the same distinction by another name,) or call all intransitive verbs neuter, as MURRAY, who

\*I would, however, as in mathematics, avoid a multiplicity of rules.—MURRAY and his copyists extend the simple rule "a verb must agree with its nominative, in number and person," into half a dozen rules. The rules that "the subject of a verb must be in the nominative case." "Prepositions govern the objective case," "active transitive verbs govern the objective case"—are also extended into a rule for relative pronouns, one for the conjunction "than"—&c., &c.

is also compelled to divide his *neuter verbs* into two classes, yet the distinction exists. According to the idiom of our language, and good usage, they are a distinct class of verbs, whether we call them neuter or not, and are distinguished by always having the same case after them as before them.”\*

“Are sit and stand, always neuter verbs?”

“Not always. If they do not denote action, grammatically they have no action, and are parsed neuter verbs. To sit or stand when denoting action as sit still, sit up or stand erect, are active verbs, and are so used by good authors. But when they denote merely position, as the man sits (is) on the chair, the table stands (is) on the floor, they are used as neuter verbs. Notwithstanding there is action in sitting, yet when the word is used merely to denote his position on the chair, it is distinct in its signification: therefore, we will parse them neuter verbs. The same rule is applicable to other verbs as to look, to smell, &c. The clouds look black, the rose smells sweet, denoting no action, and I smell the rose, and look at the clouds denoting action.”†

#### EXERCISES OF SECOND CLASS.

“I have ruined my friend.”

“Have is a verb”—says scholar, No. 1, of the indicative mood, perfect tense, agreeing,” &c.

The next one takes up ruined and parses it in the same way. The Teacher says, “not correct: pass on to the next.”

A pupil at length discovers that the two words have and ruined should be parsed together.

“No,” says the Teacher, “you have separated them and they must remain so. Every word in our language has a

\*To dispute with CARDELL whether all verbs are active, is not teaching Grammar; and to dispute, as some authors, do with MURRAY, whether *to walk* and *to run* are active or neuter verbs, is mere trifling.

† “*The man falls from the chair.*” *Falls* is parsed an *active verb*, although the body of the man is strictly *passive*, the action is performed on him by the attraction of the earth; yet, *grammatically*, the *man falls*, and *to fall* is *to act*, in accordance with the structure of our language, as much as *to fly*.

distinct meaning; and to permit you now to connect the two words, would be an admission that they cannot be parsed separately.”\*

“Have” and “ruined” are at length parsed separately; they are next parsed together, and the difference explained between have as an auxiliary and as a principal.

“Is written,” is next parsed conjunctly and separately.

“He is not volatile,” is the next sentence.

“Not,” says one of the class, “an adjective describing the noun volatile.”

“What kind of a volatile is a not volatile?” asked the Teacher.

“A not volatile!” repeats the pupil with surprise.

“Yes,” continued the Teacher, “an adjective describes a thing. Is the thing a good, a bad, or a not—thing?—or knotty, perhaps you mean.† A knotty volatile! Is that it? Will you tell me what a volatile is?”

“Volatile is not a noun,” replied the pupil.

“Then not is not an adjective,” said the Teacher, who demonstrates by various examples the absurdity of parsing not as adjective in any case even when it is placed before a noun.

One of the class parses “volatile” as a verb; the Teacher conjugates the verb

“I volatile,  
Thou volatilest,  
You volatile,  
He, she, or it volatiles.”

“He taught me grammar.”

We are now in another class.

T.—“Was it I or Grammar that he taught.”

A.—“He taught grammar to me.”

T.—“Will you change the verb taught to a passive verb?”

P.—“Grammar was taught to me.”

\* This is intended to impress upon the pupil's mind that every *word* has a distinct meaning of its own.

† This renders the incorrect parsing of adjectives so ridiculous that it improves the pupil very soon in that respect.

T.—“Will you parse I was taught grammar?”

P.—“Was taught, a passive verb—.”

T.—“What is the nominative case to a passive verb? The subject or object?”

P.—“The object.”

T.—“But grammar is the object, and was taught to me.— The pronoun me is the object of to.”

The class can go no further: but their desire to know is aroused; and I am sure of an audience.

In plain English, then, the phrase is sanctioned by good usage and by all grammarians, which, of itself, according to the present law of language, is a sufficient reason for its use. If, however, it is not sanctioned by some regular law of language, it belongs to the list of anomalies or idioms as

“The cloth is worth six dollars a yard.

The wall is 20 feet high.

The goods are selling.”\*

“But,” I continued, “He taught me,† i. e. I was taught.— So was grammar taught and when they come together in the same sentence, one must be taught to the other; as two persons are introduced—one to the other: I introduce both, and either may be the nominative to the passive verb, the other remaining of course in the same case after the passive as it was before—with the transitive verb. The rule says that ‘a passive verb sometimes governs the objective case.’ But it has a reason for its government.”‡

It is not profitable to dispute with authors of text books to your pupils. Better explain their principles and compare them, leaving the pupils to judge for themselves. One of my pupils once asked me which of the following sentences is the most correct:

\* This idiom is sanctioned by GOULD BROWN and others.

† We might argue from the Latin, that “*I was taught grammar*,” was correct in English were it justifiable.

‡ This is one example of many to show the mode of thorough explanation.

"If I was in town,"

"If I were in town."

Instead of deciding, I wrote several sentences of the subjunctive mood, as

"If he were in town, I would go and see him."

"If he was there, I did not see him."

"If he be good, he will be happy."

"If he is good, I am deceived,"

and compared them with the same sentences without variation according to some innovators, and explained to him the two systems as taught by different authors.

#### FIRST CLASS—EXAMPLES IN PARSING.

He is noble.

T.—"What is an adverb?"

P.—"An adverb is a word used to qualify a verb, &c."

T.—"What is an adjective?"

P.—"An adjective is a word used to describe a noun."

T.—"Would you say, He is noble, or He is nobly?"

P.—"Noble: a noble man, or noble person."

T.—"He works noble, or nobly?"

P.—"Nobly, because it describes how he works."

T.—"His work is well, or good?"

P.—"Good, because it is good work."

T.—"He works good or well?"

P.—"Well, because it describes how he works."

T.—"Can an adverb qualify a neuter verb?"\*

P.—"Yes, sir, He is there."

T.—"An adverb of manner, can never qualify a neuter verb nor has a neuter verb any adverb, really belonging to it. In the sentence, He is there, there more properly belongs to he: but as the word there cannot describe a noun, we call it an adverb. If it could describe a noun, the verb *is* would change it to an adjective, as

He works well,

\*I repeat here, that it matters not whether the term *neuter* is correct, or not; the distinction must exist by some name.



He is well,  
 either of which is correct: but you may not say, He is nobly.  
 You cannot correctly say, He works good; but you may say,  
 He is good.

He is high.

P.—“High is an adjective, &c.”

He flies high.

P.—“High, an adverb,” &c.

*Teacher*—“Does the word *high* denote the manner of flying? Or does it describe the situation of the bird? *The bird is high*. Here, you see that after the verb *is*, it is an adjective without cavil but after the verb *fly*, it is not so clear to your mind. Why? Because an adverb cannot denote the manner of a neuter verb, and an adjective cannot qualify any verb: and as *high* is evidently an adjective without regard to position in the sentence, and can be used only to describe something: if intended to describe the manner of flying, it is incorrect.”

*Pupil*—“*High* is an adjective, describing *bird*.”

*Teacher*—“Or, the situation of the bird.”

*The Dog looks wicked*.

P.—“*Wicked*, an adjective describing *dog*.”

T.—“May it not qualify the verb *looks*.”

P.—“No sir, *wicked* is an adjective, as *high*, and must describe something.”

T.—“But *wicked* is different from *high* in this respect.—When we say *the bird flies high*, we know the word *high* to be used to denote the position of the bird: for the adverb *highly* which denotes the manner of some verbs, cannot denote the manner of flying. To fly *highly* would be absurd: whereas the *dog may look wickedly* at you. It therefore depends upon your meaning, whether you use *wicked* or *wickedly*.—If the dog *looks* (is) a *wicked* dog, *wicked* is an adjective describing *dog*; if you intend to denote his manner of *looking* at you, it should be *wickedly*.”

P.—“How then are we to know whether the sentence is correct or incorrect?”

*T.*—"We must presume it to be correct, and that the author (being a correct writer) means to describe the look of the dog. I will give an illustration. The phrase *He has wrote*, is absolutely incorrect; but *He has loved*, may be either correct or incorrect, according to the author's meaning. In reading a sentence of this kind unconnected with other words, we must presume the author to be a grammarian, and parse it accordingly. The author unacquainted with grammar, sometimes *means* what he does not *say*: and therefore a speaker should be acquainted with the language which he attempts to speak or write. *Wicked*, therefore, in this sentence, is an adjective; and *looks*, a neuter verb."

*The clouds look black.*

*The rose smells sweet.*

*P.*—"Look and smells are then neuter verbs?"

*T.*—"They are. *Look* denotes nothing more than the appearance of the clouds, which *look* (are) black, and *smells* the perfume of the rose.

The person who *smells* acts, but he cannot sweet *smell* the rose: he might *smell it sweetly*, if there were any meaning in the phrase.

### THIRD CLASS.

*John took a handful of ashes and threw them into the stove.*

*T.*—"Where is this sentence incorrect?"

No answer.

*T.*—"John fell down, and hurt herself."

Now, any child detects instantly the error in this sentence.

"*Pronouns must agree with the nouns for which they stand in gender number, and person.*"

By suitable explanations, the Teacher easily illustrates to the pupil, that the former sentence violates the same rule as the latter.

*Some wit called clear blank paper, every infant mind.*

*T.*—"This means simply that some witty person compared a

*child's mind to blank paper: i. e. called it blank paper. Do you now understand it.\**

*The boy fell and cut his lip on the ice.*

*The red cow and the fat pig were in the yard.*

*John has a new coat, and a white hat.*

*William bought a top with the money which was given him by his father.*

These sentences are suitable for young pupils, and any one who has been taught to understand a noun and a verb, can parse them rapidly. As the pupil advances in knowledge, make the sentences less simple; but, by no means permit him to parse language he does not understand. The Teacher may understand very well, such a sentence as

*"Mighty one all hail! I joy to see thee on thy glowing path: stern, unwearied, resolute,"*

but the child probably does not.

I will close this Chapter by a few exercises of the first class.

*Every person should be careful of their reputation.*

P.—"Their is incorrect, because it is a — pronoun of the plural number, and the noun person which it represents (or for which it stands) is in the singular number, but the rule says, *A pronoun must agree with the noun for which it stands, in number, person and gender.* Therefore, *their* should be *his*: a pronoun of the singular number, agreeing with person, &c."

T.—"In what number, person and gender, is *person*?"

P.—"Singular number, third person, common gender.†

T.—"Will you parse the pronoun?"

P.—"*His* is a pronoun of the singular number, third person, masculine gender."

T.—"They do not, then, agree in gender."

P.—"Common Gender."

\* Much time is often lost to the pupil by permitting him to parse what he cannot understand, or trying to parse it.

† We will not dispute with those who deny the Common Gender. "The thing we call a rose, by any other name would smell as sweet." The distinction exists, call it by what name you please.

*Another Pupil*—"There is no pronoun in our language, of the common gender. It should, therefore, be *his* or *her* reputation."

*T.*—" *His* or *her* is what is denoted by what is called common gender, but it is denoted by no pronoun in our language. What are the pronouns denoting gender?"

*P.*—" *He*, *she* and *it*, masculine, feminine and neuter."

*T.*—"There being no pronoun denoting the common gender, *his* or *her* would be correct, but that custom i. e. *good usage* has established the pronoun *his*. This pronoun denoting a *person* without regard to sex, as *man* is frequently used to denote *mankind*."

"Will you please to let Sarah and I go for water?" asked a little girl belonging to my grammar class.

"Will you parse the word *go*, before you go?" I asked.

"*Go* is a verb—"

"Well,—go on. Is it active or neuter?"

"Active."

"Transitive or Intransitive?"

"Intransitive."

"What mood and tense?"

"Indicative mood, present tense, agreeing with its nominative *I*," &c.

"Where did you obtain the *I*?" I asked.

"*I* should be *me*," I replied: "and is the object of the transitive verb *let*."

I proceeded until she parsed it correctly: when she went for her water.

"I am industrious *that* I may be rich."

"He is so industrious *that* he will be rich."

"I knew *that* he would be rich."

"*That* man is rich."

"*That* was a rich man's house."

"He *that* is industrious will be rich."

"*That* he is rich is believed by all."

"*That that* I said was, *that* he was rich."

"*That that that* man said was *that* he was rich."

"He said *that that that that* man said was not *that that* I said."

"*That that* I said was this: *that that that that that* man said was not *that that that* I said."

"Not *that* I loved Brutus less, but *that* I loved Rome more."

"It is evident *that* he is poor."

"I know not but *that* he was rich."

"But *that* I am not able, I would do it so *that* it would last."

"*That* he ought to do it, is proved by this fact."

"Why is it *that* he is poor?"

"We hold this truth to be self-evident, *that* all men are created equal."

"It is such *that*," &c.

These last exercises, many more of which might be given, are practised with the advanced classes, to teach them thoroughly, the signification of a word, without respect to grammatical names. Some of our text books say—" *That* is a relative, when *who* or *which* may be substituted for it."

" *That* is a demonstrative, when it is joined to a noun, to point it out."

" *That* is a conjunction in all cases, when it is neither a relative, nor a demonstrative."

This is a very good classification; yet it is evident that the word "*that*," when it is neither a relative nor a demonstrative: and is according to the books—a "conjunction," has different significations. In many examples it plainly represents a phrase, and in others it is only a connecting word: and to explain such words fully to the pupil, the teacher must place the word before him in a variety of examples.

To prolong these exercises, would make a treatise on the *science*, rather than the *teaching* of it. I will, therefore, leave it, with its imperfections, to the judgment of my fellow Teachers.

We will append to this Chapter, an extract from an article of the Compiler's, from the Pennsylvania School Journal :

As the pupil advances in grammar, we should endeavor to teach him to avoid the idioms of his particular neighborhood. These errors appear not only in his conversation, but in his composing lessons. Many of these are of a kind, not reached by the regular Grammar rules, as *more nor that,—the ink is all,—he is got to do it,—he is got it done,—he is got a book,—if he had have done it,—if I would have known it, I would have told you, &c., &c.* Others are violations of positive rules, which being often used in good society, are more likely to be imitated, than more vulgar errors, as between you and I,—Please to let James and I go for water,—I saw John Smith, he who owns the black horse tavern,—I done it, &c., &c.

Such errors, all of which are common in many places, should be particularly pointed out to the pupil, during his progress in study.

Let thorough explanation be the Teacher's motto, which may be illustrated by the following example of parsing :

*Pupil* (reads)—“The man whom you saw, perished in the snow.”

*Pupil*—“*Whom* is a relative pronoun”—

*Teacher*.—“Why is it a relative pronoun?”

*P.*—“Because it stands for the noun *man*.”

*T.*—“In what case is *man*?”

*P.*—“Nominative case.”

*T.*—“In what case, person and number is *whom*?”

*P.*—“Objective case, third person, singular number, agreeing with *man*.”

*T.*—“Why is it in the objective case?”

*P.*—“Nominative who, possessive whose, objective *whom*.”

*T.*—“What is the meaning of objective case?”

*P.*—“The object of a transitive verb, participle or preposition.”

*T.*—“What is *whom* the object of?”

*P.*—“Of the verb *perished*.”



T.—“Who perished?”

P.—“The *man*.”

T.—“Perished what? What did the man perish?”

No answer.

T.—“If *whom* were *who* in this sentence, in what case would it be?”

P.—“Nominative case.”

“No,” interposed another pupil, “*who* is incorrect.”

“Why,” asked the Teacher, “would it be incorrect?”

“Because, it should be the objective case,” was the reply.

“Why should it be the objective case?”

“Because it is the object of ——” (a pause.)

“Why should it be the objective case?” reiterated the Teacher, “can any one answer?”

“Because it is the object of the verb *saw*,” was, at length answered.

“The man whom I saw,” continued the Teacher, “Whom did I see?”

P.—“The *man*.”

T.—“Is *man* the object of *saw*? but, you have already parsed *man* in the nominative case.”

P.—“No, *whom* is the object of *saw*.”

T.—“Then, *man* is not the object?”

P.—“No, sir.”

T.—“I did not see the *man*.”

Pause.—“Yes sir,” answered several voices.

T.—“It appears that you all know that the pronoun *whom* is in the objective form; but as you do not know that it is the object of any verb, participle, or preposition, you do not know that it is in the objective case. One of you said that if *whom* were *who* it would be in the nominative case; another said, *who* would be incorrect. Now as you all appear to judge the case by the form, the former is right; for *who* is in the nominative form, and is only incorrect when it is not in the corresponding case; which none of you can say it is not.—You know only the form, as learned from your books; and

judge the case by it alone. Now let me explain. 'The man *whom* or *that* I saw perished,' clearly expresses that the man was seen by me; but as the word *man* is already nominative, it cannot be objective, also: i. e. grammatically, although it is philosophically, the object of the verb *saw*. Therefore, the pronoun *that* or *whom* is used to represent the noun *man*, to be governed by the verb, instead of the noun itself. And as relative pronouns are used to connect sentences,\* it is placed before the governing word, to connect it with the preceding."

\* The true definition of a conjunction is a word that connects and *connects* only.

## CHAPTER IV.

### THE TEACHING OF ARITHMETIC.

WARREN COLBURN, at a Convention of Teachers held in Boston, said :

“By the old system, the learner was presented with a rule which told him how to perform certain operations on numbers; and when these were done, he would have the proper result. But no reason was given for a single step. His first application of the rule was on abstract numbers, and so large that he could not reason on them, if he had been disposed to do so. And when he had got through, and obtained the result, he understood neither what it was, nor the use of it.—Neither did he know that it was the proper result, but was obliged to rely wholly on the book, or more frequently on the Teacher. As he began in the dark, so he continued; and the results of his calculation seemed to be obtained by some magical operation, rather than by the inductions of reason.

“Let him commence,” he continues, “with practical examples, in which the numbers are so small that he can easily reason upon them. And the reference to sensible objects, gives him an idea at once of the kind of result which he ought to produce, and suggests to him the method of proceeding necessary to obtain it. By this, he is thrown immediately upon his own resources, and is compelled to exert his own powers. At the same time, he meets with no greater difficulty than he feels himself competent to overcome. In this way, every step is accompanied with complete demonstration. Every new example increases his powers and his confidence. Most scholars

soon acquire such a habit of thinking and reasoning for themselves that they will not be satisfied with anything which they do not understand, in any of their studies.

"Instead of studying rules in the book, the reason of which he does not understand, the scholar makes his own rules; and his rules are a generalization of his own reasoning, and in a way agreeable to his own associations."

The operations in this stage of a child's studies (which we call No. 1,) are mostly confined—in my experience—to questions involving small numbers, easily understood, and independent wholly of rules. Mental arithmetic may be commenced at any time, and continued through the whole course of his studies.

Nor should the pupil in his first studies, be permitted to work out questions by any rules. Let him use such books as COLBURN'S or STODDARD'S Mental Arithmetic, or GREEN-LEAF'S or DAVIES', or, which is better, let the Teacher himself give promiscuous examples involving the various principles. How often have we known pupils, taught in the old way, who could do every question under the heads of addition, subtraction, multiplication and division; but who, when given a question without a rule, would ask, "Must I multiply or divide, add or subtract?"

If he knew the answer, he would perform operations until he obtained it, if he could; or, if he could not obtain it, by "hook or crook," ask the assistance of the Teacher; and be satisfied with the performance, without caring to understand it. Such pupils, as they proceed, cease, more and more, to reason, until they cease to think, altogether. In the "Rule of Three," for example, he will state the question in different forms, until he obtains the answer: when he is satisfied with having performed an operation, and obtained an answer, neither of which he understands. If required to perform it by the rule, he "writes the same name or kind as the answer (in the book) in the third term." He "considers from the nature of the *answer in the book*, whether it is to be greater or less than this third term."

Thus he continues in the dark, until he is through the book, without understanding a principle of arithmetic. In a school I lately visited, a boy calculated the interest on 15 dollars, at 5 per cent.—by multiplying 15 by 5—making 75 the answer: but whether dollars or cents he couldn't say. He had gone on until he had reached the answer, (which was merely 75,) and that was enough.

I once had a pupil, a little girl, who was always satisfied with the operation performed by the Teacher, without asking a question. I had in vain labored to make her think. To any explanation, she was heedless; and either with or without it, equally satisfied. The instructions of her Teacher, she implicitly obeyed, without judgment, or even a thought. A simple expedient often wakes up the mind. She was required to reduce feet to inches on the blackboard. As usual, she could do nothing; and I told her to divide by 3 because 3 feet were in a yard. Seeing her do that so readily, I directed her to divide by 12, the number of inches in a foot. It was done without hesitation. "Multiply by 144—the number of square inches in a square foot, and," I continued, prompted by curiosity to see how far she would follow without suspicion, "divide by 9 the square feet in a yard." I then led her through troy weight and several other tables, and she was about to multiply by  $365\frac{1}{4}$  days, when the class, who could be restrained no longer, burst into a hearty laugh. She stopped, turned around with a bewildered look upon the class, then at the Teacher, and as if her ridiculous performance had suddenly flashed upon her mind, she burst into tears, and sank sobbing into her seat.

"Oh, Mr. Lamborn," said she, "why did you tell me to do that?" "Why not?" said I, "you would have had the answer shortly. You are mostly satisfied with any operation that brings the answer." After that time, whenever she was disposed to take an operation upon the word of her Teacher, or the answer, I would ask her if she remembered the blackboard. This was hint enough. She would then think.

A young lady who had gone through "Emerson's Second Part," entered my school as a pupil. The questions in this book, having no answers, I expected to see principle and judgment. She couldn't work for answers. But I found that a pupil not taught to think, may be taught even worse (if possible) than he who works solely for an answer. Without thought,—without answers, she had no guide. She added, subtracted, multiplied and divided by random. Depending upon the Teacher, she worked wholly in the dark. I will illustrate her case by an example. Her question was, "What is the interest of a certain sum at 7 per cent. per annum, for 5 months?" I obtained the interest for one year, which I divided by 12 to obtain the interest for a month: I then multiplied the interest for one month by 5, to obtain the interest for 5 months. All this I explained thoroughly.

The next question, was the discount of a sum for 4 years and 7 months—reckoning lawful interest. She multiplied by 7, as I had done, divided by 12, and multiplied by 4; and when asked why she did so, she replied because I had so worked the other question: but, whether discount, interest, or amount was what she had, had not entered her mind. She could not even say, "I have the answer:" but very innocently answered, "I am trying to do the question."

Who is to blame for this inaction of the pupil's mind? The Teacher who directed his first studies. It is much easier for the Teacher to tell a child how to perform an operation and still more easy to perform it himself for the child, than to teach him to understand it. I hold the doctrine that a Teacher should never solve a question for a pupil. Neither should he tell him directly how to do it.

"If the learner meets with a difficulty," says Mr. COLBURN, "the Teacher should examine him, and endeavor to discover in what the difficulty consists; and then, if possible, remove it. Perhaps he does not fully understand the question. Then it should be explained to him. Perhaps it depends on some former principle, which he has learned, but does not readily call to mind. Then he should be put in mind of it. Perhaps



it is a little too difficult. Then, it should be simplified. But by no means should the learner be told directly how to do it; for then the question is lost to him. He is perfectly satisfied with it, and will give himself no further trouble about the mode in which it is done. When the learner requires assistance too often, it is an indication that something has not been learned thoroughly; and he then should go back to some place, that he does perfectly understand, and review.

"Do not simplify practical examples by means of abstract ones. For example, if you propose to a child this simple question: "George had five cents, and his father gave him three more, how many had he then? I have found that most persons think to simplify such practical examples by putting them in an abstract form, and saying, How many are 5 and 3? But, the question is already in the simplest form that it can be. The only way that it can be made easier, is to put it in smaller numbers. If the child can count, this will hardly be necessary. No explanation more simple than the question itself can be given, and none is required. The reference to sensible objects, and to the action of giving, assists the mind of the child, in thinking of it, and suggests immediately, what operation he must perform; and he sets himself to calculate it. Most persons, when such a question is proposed, do not observe the process going on in the child's mind; but because he does not answer immediately, they think he does not understand it, and they begin to assist him, as they suppose, and say, *How many are five and three? Cannot you tell how many five and three are?*

"Now, this latter question is much more difficult for the child than the original one. Besides, the child would not probably perceive any connexion between them. He can very easily understand, and the question itself suggests it to him better than any explanation, that the five cents and the three cents are to be counted together; but he does not easily perceive what the abstract numbers, five and three have to do with it. This is a process of generalization, which it takes children some time to learn."

The second stage (*Number 2*) is the arrangement of what he has learned into rules; which will be much more readily remembered than when committed to memory without understanding them. The operations on large numbers may now be demonstrated. By rules, we do not mean all the rules the text-book may contain, but a few general rules; avoiding, as much as possible, special rules for special questions, as hindrances to the making of thorough scholars. But what rules would you call general, and what special? This depends upon the method of teaching. Let us cast our eyes over the pages of some of the modern popular School books. In Smith's *Arithmetic*, we are told to multiply by .4, by .3, by .375, by  $\frac{7}{10}$ , by  $^{\circ}$ , &c., to reduce Federal money to obsolete currencies; and as many more rules to change them again to Federal money, with examples under each rule. Who would permit his pupils to waste their precious time with such stuff.\*

To multiply a fraction by a whole number,

“ “ whole number by a fraction.

“ “ one fraction by another,

To add fractions,

To subtract fractions,

To divide a fraction by a whole number,

To divide a whole number by a fraction.

“ “ one fraction by another.

To reduce whole numbers to fractions of a greater denomination.

To reduce fractions to whole numbers of a less denomination.

To reduce fractions of a higher denomination to a lower.

“ “ of a lower denomination to a higher.

\* Although we so emphatically condemn the application of rules to practical questions, without demonstration, or before the pupil's mind is sufficiently matured to comprehend them, yet we think it unnecessary to postpone the operations of the primary rules on abstract numbers, until the pupil is fully acquainted with their application to practical questions: nor is it even necessary that he know that there is any connexion between these. In plain words, a child may be taught to perform operations in additions, subtraction, multiplication and division, before he is acquainted with any principle; merely as a mechanical performance. The first exercises in the tables are merely mechanical, and are learned before they are understood. The pupil, however, should neither apply these operations, nor the tables, to practical questions, until he can demonstrate them.

Then follows Addition, Subtraction, Multiplication and Division of Decimals.

These are all *special rules*. The pupil who is taught thoroughly the Primary and Fundamental Rules, needs them not.

In some books we find a still further division, as

Single Rule of Three of Vulgar Fractions.

Double Rule of Three of Vulgar Fractions.

Single Rule of Three of Decimal Fractions.

Double Rule of Three of Decimal Fractions.

With equal propriety they might have added

Simple Interest in Fractions.

Compound Interest in Fractions.

Discount in Fractions.

Simple Interest in Decimals.

Compound Interest in Decimals.

Discount in Decimals,

and so on, through the vocabulary of special rules with which our books abound.

In other books we find rules enough for multiplying and dividing compound numbers to bewilder any student, and which he makes no use of after he leaves the school room.— In some we find Tare and Trett, Commission, Brokage, Insurance, Assessments, Duties, Barter, Loss and Gain, &c., &c. But why stop? Why not have rules for breakage, burnings, floods, school taxes, militia fines, State, county, road and poor taxes? No wonder that pupils who have ciphered through the books, know nothing about arithmetic.

If I were asked, what general rules I would adopt, I would say, Numeration, Addition, Subtraction, Multiplication, and Division: The extraction of the cube and square roots, and perhaps a few others. But I would never use a special rule where a general rule would answer. Proportion, or the Rule of Three,\* I use as a general rule or guide to direct the student in his application of the primary rules. Strictly speaking, there are no general rules except the five primary rules first mentioned. Instead of teaching rules for different

\* But even these rules should be taught by the common sense of the pupil, rather than by the book.

rates of interest, for years, for months, for weeks and for days, for discount, for commission, for gain and loss, per cent., &c., &c., in accordance with some of our text-books, I teach that per cent. is per hundred, and teach the pupil to apply the principle to practical questions. No special rule for per-centage is used and none is needed. Barter, Discount, (Single Position) Fellowship, &c., are but applications of the Rule of Three;\* and hindrances, in all cases. The pupil always learns more, and faster, without them. So with special rules, generally: the learning of them is worse than the waste of time.

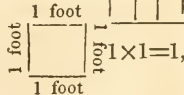
"It is interesting, amusing, and perhaps instructive to the pupil to compare the rule which he has arrived at by his own inductions, to the book rule: when he will often have the satisfaction of seeing them the same.† When they differ, the Teacher may explain the difference. But, in no case, permit him to apply a rule to a practical question without a demonstration:‡ nor to perform any operation without a reason.

\* Or simple analysis.

† In most cases the rules will agree; but whether or not, let the rule be secondary to the principle, and not the principle to the rule.

‡ We do not say that the pupil must (in all cases) be able to demonstrate, the operations of the square and cube roots of large numbers; (or even long division) before he applies them to practical questions; but that he should understand and be able to demonstrate their application and their principles. Never permit him to extract a root either of a large or small number, without a reason, or without understanding the principle: but the demonstrations of the operations on large numbers, may be postponed until the pupils mind is fit for it. In the No. 1 stage, these principles should be thoroughly taught on small numbers, by their application to practical questions; before the pupil is able to perform the mechanical operations on large numbers. Roots of numbers as high as thousands, are easily solved without rules and as easily understood, by young children. The principles are easily demonstrated by diagrams on the black-board. Thus, the square of 3 is 9: and the square root of 9 is 3.

That the square of a fraction is less than itself, is readily demonstrated thus. Here is the square of a linear unit: which is a square unit, or one square foot.



Divide this square foot into four equal parts, thus: Each part will be half a foot long, and half a foot broad,  $\frac{1}{2}$  containing a quarter of a square foot. Thus the square of  $\frac{1}{2}$  is plainly demonstrated to be  $\frac{1}{4}$ , so that when the pupil  $\frac{1}{2}$  performs the operation  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$ , he fully understands it.— Cubes can be demonstrated by blocks, or cutting and apple.

Although the pupil should not be allowed to pass over a principle without understanding it; and when he is discovered to have passed over some essential principle without understanding it, he should be put back to it. Yet we do not pretend that he must be a thorough arithmetician before he can be profitably put into algebra or geometry.\* If he thoroughly understand the fundamental principles of arithmetic, although he may not be an adept in its practical application, he may be successfully taught algebra and mensuration.† But by no means would I abandon his former studies. Frequent reviews are beneficial. When the pupil becomes weary of a particular study, it is in vain that you endeavor to force him through; but by advancing him, you encourage him; and by frequent reviews on the blackboard you can perfect him in his former studies. As said in the last chapter, the advancing of a child in spelling before he has fully learned his alphabet, encourages him, and the letters themselves are taught thereby. So he may learn arithmetic by his progress in algebra.

He may sometimes be placed as a Teacher of a class in arithmetic, which he will be ashamed as an algebra scholar to not be able to teach: and self respect will urge him to study himself.

To teach correctly, the Teacher himself should understand what he professes to teach. Not to be able merely to solve the question, but to demonstrate it; not to show his skill in ciphering, but to be ready at all times, in season, or out of season. "It is not enough," says Mr. COLBURN, "that the Teacher is able, in some way, to obtain the answers to the questions. He should be able to give the reason for every step he takes in the process; and in a clear and concise manner." If he do this, the pupil will soon be able to do the same. Every operation of the pupil should undergo the strictest scrutiny.

\* Even a child can learn the elements of Geometry: and arithmetic can be illustrated by the elements of Algebra.

† The pupil, however, should not be permitted to proceed with anything which depends on a former forgotten principle until he is again made acquainted with it.



It is not even enough that he obtains the proper result knowing it to be correct, unless he can explain the process step by step, and demonstrate its truth. If performed by a written rule, he must explain the rule. He must know the rule itself to be right. To require a child to commit a rule to memory which he does not understand, is absurd. How much more absurd is it to expect him to remember more than fifty rules which he does not comprehend, and apply them to practical use.

Some Teachers discard all but the five primary rules. In my experience I have always found it necessary to teach a few other general rules: although, I believe, that most of them might be easily dispensed with. To depend altogether upon analysis, seems to leave the pupil too much without a guide,\* while, too many, distract the mind and divert it from the true course.

Every successful Teacher will agree with Mr. Colburn, that "Whatever you are teaching, keep this precept in view: Teach but one thing at a time, and apply yourself strictly to that, until the pupil is master of it, before he is put to another. Be sure that one thing be learned, before another is attempted." Suppose that 9 cwt. 1 qr. 13 lbs. of sugar are to be multiplied by 6. The pupil can multiply these numbers by 6, but he needs to be told that they are to be multiplied; he has not yet been sufficiently trained to think: Put him back to No. 1, and let his faculties be developed on simpler questions. Suppose he cannot multiply or divide compound

\* A pupil sometimes becomes embarrassed in a simple solution and does not know how to proceed; when, by referring to some general rule, he is immediately put on the right track. For example, he wishes to obtain the price per gallon, when  $31\frac{1}{2}$  gallons are worth 20 dollars, and he hesitates. He knows that one number is to be divided by the other, but is at loss to tell which is the number to be divided. True, it is a plain question; but the child is embarrassed; by a simple statement of the Rule of Three, he is relieved. Sometimes a solution in Reduction is assisted thus; if one yard contain 3 feet how many yards do 150 feet contain.



numbers, teach him to do it (better by his own induction) than by the written rules.\*

Suppose it is required to be reduced to a lower denomination, and the pupil fails to do it, put him to Reduction. There may be a fraction as  $\frac{1}{3}$  of a lb. to be reduced to the fraction of a cwt. Discover the point of failure. If in Reduction, put him back to it; if in Multiplication or Division of fractions, put him there: but on no account refer him to such rules as "multiply the denominator by the number contained in one of the next higher denomination." "But, it is much the best way, to teach him thoroughly as he goes." Teach him to think from the first. Let him do nothing without a reason. Require him to say not only *how* but *why*.

The Teacher, is often annoyed by the pupil in mathematics, during his attendance on other studies. How is this to be avoided? For the pupils in mathematics, especially the younger pupils in arithmetic to be busy only during the regular recitations, is a waste of time, which should not be permitted. To spend the interim wholly in preparing for the regular recitations, is also a waste of time. The study of their books, seems best adapted to that time. And here is wherein *books* may be made valuable assistants to the Teacher. He must not be annoyed during the other recitations; neither must the pupils at their seats, be idle.

HENRY K. OLIVER, of Massachusetts, says:

"It is a most lamentable fact, that in all of our common schools, there is (not because of any fault of the Teacher, but from the defects of the system,) a most profuse and shameful waste of time. A great portion of the customary school hours is wasted in absolute idleness, wasting the priceless energies of mind and body, to which any employment, even the most unsatisfactory, is preferable.

\* I once visited a School during a visit of the School Directors. A boy brought a solution to one of the Directors. He had multiplied 2£. 3s. 6d. by 20, and multiplied it correctly too. "You should always go by the rule," said the Director (who had been a School Teacher) "which says multiply by two or more factors, when the multiplier exceeds twelve."

Some Teachers, to avoid this waste of time, examine all the slates that are presented to them during the other exercises. This is wrong. To permit idleness is also wrong. Some Teachers, in their eagerness to reform these abuses, discard text-books altogether. There does, indeed, seem to be no need for text-books, if the pupils are not permitted to use them, except at recitation; for then, the Teacher, and not the book, should be the instructor. But the Teacher cannot, by any process, either by writing the questions himself, or by giving them out orally to the school, prevent much waste of time. Some will have the question performed, before the others have begun.— Besides, the Teacher is thus interrupted in his attention to the regular recitations. A book, therefore, seems necessary to keep the pupils busy during this time. But let them be merely assistants. The Teacher himself, must be the principal. For a pupil to sit at his seat in the old way, performing certain operations, and obtaining certain answers, without understanding either the operation or the answer, is time worse than thrown away. Every operation should be explained by the pupil; who may note down the explanations needed: to be given at stated times, either singly, or on the blackboard to the class, or to the whole school. It may be said that some may take advantage of this regulation to be idle. But he who is disposed to be idle, will no more trouble the Teacher with his slate, than be employed at his seat. It may be said by some who discard text-books that the pupil will learn to work, without principle, merely by the book. If from the first, he be taught aright, and to expect a rigid examination, he will work understandingly; for he will expect to give a reason for what he has done. Besides, if taught aright, he will need but little assistance.

This is also true with other studies: Natural Philosophy, Chemistry, Physiology, &c., &c. Let the oral explanations of the Teacher be thorough (and made interesting by amusing illustrations in anecdote, and interesting stories,) and they will be impressed upon the minds of the pu-

pils. Whereas, by committing the lesson in the book to memory, they may learn nothing but the words. The Teacher should, in every study, prepare the pupil for the book, by oral explanations: when to read the book is sufficient. Nothing is gained by committing it to memory: and so every Teacher will experience who has tried it.

In teaching arithmetic, the pupils should be taught system in their demonstrations. For example, I give out the question: If I give away  $\frac{1}{4}$ ,  $\frac{1}{3}$ , and  $\frac{1}{6}$  of my money, and have six dollars remaining, what had I at first? The pupil performs the operation.

"Will you explain it?" says the Teacher.

Pupil commences: "I multiply each numerator by"—

"Stop," says the Teacher, "that is the rule for obtaining the common denominator."

Another pupil: "I first bring them to a common denominator: then"—

"That," interrupts the Teacher, "is the rule for adding fractions: We wish the demonstration of this question."

Third pupil: "I add the fractions together, which makes  $\frac{3}{4}$ , the part of the money I gave away,—being  $\frac{3}{4}$ : consequently the six dollars is  $\frac{1}{4}$  of the money I had at first, and the whole sum 24 dollars."

He, or some of the others may, if necessary, prove the operation; or they may now demonstrate the adding process.—Suppose one of the class be requested to do so.

He commences: "I multiply the numerator by"—

"I have told you before," says the Teacher, "that is the rule for obtaining the common denominator."

Another pupil: "I first obtain the common denominator; then add the numerators," &c.

"That is correct," says the Teacher, "you may now explain the process of obtaining the common denominator—which is done by the pupil.

But he should first be taught to obtain the common denominator by his own inductions, without reference to rule. Thus,

$\frac{1}{3}$ ,  $\frac{1}{4}$ , and  $\frac{1}{6}$  are equivalent to  $\frac{4}{12}$ ,  $\frac{3}{12}$ , and  $\frac{2}{12}$  which added together make  $\frac{9}{12} = \frac{3}{4}$ ; which operation, the pupil can understand.

Suppose the question to be—If three yards of cloth cost six dollars a yard, and I gain six per cent. by the sale of it, what was the selling price? A pupil solves the question.

*T.*—"Will you demonstrate it?"

*P.*—"First I multiplied three by six to obtain the cost of the cloth; I then multiplied by 6 (the rate per cent.) and divided the product by 100 to obtain the gain, which I added to 18 dollars (the cost,) which gives the answer."

Now, this, although a thorough and complete demonstration, is wrong. The simple explanation should be,—*I add \$1.28* (which is the 6 per cent. gained) to the cost; which gives the required result. The Teacher, may, (if he think necessary,) question the pupils on the different parts of the solution; as How did you obtain 6 per cent? &c., &c.

As before said, the Teachers' judgment must be his guide, respecting rules. Let us consider! Shall we have merely a rule for Proportion, or *Rule of Three*, or shall we divide it into special rules for special subjects, one for Barter, and another for Loss and Gain, one for Supposition (subdivided into Position and Discount) one for Fellowship, &c., &c.? Shall we divide it still further, into a rule for corn, and another for potatoes, one for dry goods, one for groceries, and another for liquors? Shall we discard proportion entirely, and depend on analysis? Shall we teach the pupil Addition and Subtraction, so that he is able to apply them to special cases, or divide them into rules, for subtracting the tare from the gross, for subtracting the loss, and adding the gain? It seems evident\* that too many rules perplex the learner, while some seem necessary to afford a resting place for the mind.

I will now give you a short description of my system of teaching, not in a spirit of vanity, or dictation, but with the

\* The thorough teaching of the five primary rules are always understood as indispensable.

hope of contributing something useful to my fellow Teachers of Pennsylvania. My motto is—The fewer the rules, the better Arithmetic is taught. Ay, and the more speedily; and, (what in this age is of importance) so as to stand an examination. The time is come when a *book examination* is of no avail.

#### NUMBER 1, OR FIRST GRADE.

This branch of teaching depending neither on the scholastic attainments of the Teacher, nor on any rules whatever, but altogether upon his ability to impart knowledge to children, is more appropriately the province of a class book than an educational work. Yet a single example of this kind of practical exercises may not be amiss.

A pupil who has never read a definition, or studied a rule, is asked to solve the following question :

A man buys  $9\frac{1}{4}$  yds of cloth at  $7\frac{1}{2}$  dollars a yard, and sells it for 2 dollars a qr. ; does he gain or lose ? how much ? and how much per cent ?\*

*Solution :* The price of nine yards, at  $7\frac{1}{2}$  dollars, is  $66\frac{1}{2}$  dollars.

The price of a quarter of a yard, at the same price is  $7\frac{1}{2}$  qrs. =  $3\frac{3}{4}$  halves =  $1\frac{7}{8}$  Dollars =  $\$1.87\frac{1}{2}$  : which, being added to  $\$66.50$ , make,  $\$68.37\frac{1}{2}$ .

Nine yards and a quarter = 37 quarters at 2 dollars a quarter, are sold for 74 dollars ; consequently there is a gain of  $\$5.62\frac{1}{2}$ .

$\$5.62\frac{1}{2}$  are gained on  $68.37\frac{1}{2}$ ,—or 11.25 on 136.75,—which is 45 on 547, or  $8\frac{1}{4}\frac{1}{4}$  per hundred.

The explanation is simply—*The cloth cost  $\$68.37\frac{1}{2}$ , and was sold for  $\$74$ ; making a gain of  $\$5.62\frac{1}{2}$  on  $\$68.37\frac{1}{2}$ ; which is  $\$8.226$  + per hundred or per cent.*

Here is another example less complex :

"A post is  $\frac{1}{3}$  of its length in the mud,  $\frac{1}{6}$  in the water, and 10 feet above the water, what is its length?"

*Solution :*  $\frac{2}{3} + \frac{1}{6} = \frac{5}{6} = \frac{1}{2}$  in the mud and water, consequently  $\frac{1}{2}$  = 10 feet, and the whole = 20 feet.

\* Questions involving smaller numbers may be solved mentally.



## NO. 2.\*

The rules of Addition, Subtraction, Multiplication and Division, with numeration,† and their application to practical questions whether in Loss and Gain, Reduction, Interest or any other rule of the book, the pupil is now expected to be made thoroughly acquainted with; and, as he advances, their application to symbols as  $x+x+x+x=4x$ ,  $x-x=0$ ,  $x \times x = x^2$ , &c.—This last exercise improves his analytical powers.

Reduction is an important branch of arithmetic; yet needs no special rules: and the pupil is practised in it, by every variety of examples until he thoroughly understands it.

I now take up Vulgar Fractions; and teach, thoroughly, their primary rules. But I again repeat that I never refer a pupil to an abstract rule, for the solution of a practical question, until he has learned to do it by his own inductions. Demonstrate the principle not by the rule; but the rule by the principle. I give the pupil no rule—either written or verbal, until his own mind, (assisted, if necessary,) by the Teacher, solves the difficulty, after which, a rule may be given to explain, or enforce his inductions; which is much better than to first give a rule which he does not understand, and afterwards explain it by demonstration.

For example: I am teaching Addition or Subtraction of Fractions.

The example is—Add together  $\frac{1}{2}$  and  $\frac{1}{4}$ . The pupil will probably answer  $\frac{3}{4}$ ; but how he obtained the result, he cannot tell. I then ask—what is the sum of  $\frac{1}{3}$  and  $\frac{1}{4}$ ? or  $\frac{1}{2}$  and  $\frac{1}{3}$ ?—and he is at a stand. I then explain the first question, by changing the fractions to *fourths*, the sum of which is *three fourths*. The pupil now understands that to add fractions together, they must be brought to the same denomination; and  $\frac{1}{2}$  and  $\frac{1}{3}$ ,—or  $\frac{2}{3}$  and  $\frac{1}{6}$ —are shown to be equivalent to  $\frac{1}{12}$  and  $\frac{1}{12}$

\* Nos. 1 and 2 are somewhat similar to mental and written arithmetic.

† The limits of this work will not permit the various methods of demonstrating these rules. Most Teachers, however, we presume, demonstrate them in their own way.



—or  $\frac{4}{5}$  and  $\frac{1}{5}$ . The pupil may then read the rule in the book, which he, himself, has made.

In the study of Grammar, arbitrary rules must be sometimes learned; but in arithmetic, they should not be learned unconnected with principle.

I once invited a visitor, to examine my pupils. After they had solved several questions, and defined a number of terms, (such as fraction, compound fraction, mixed number, &c.,) he asked, "What is an improper fraction?"

"This is an improper fraction," was the reply, the boy chalking  $\frac{5}{2}$  on the black-board.

"But what is the definition of an improper fraction?" continued the visitor.

"A fraction greater than the whole."

Knowing my visitor wished the book answer, I thus *drew it out*. "What form is necessary for an improper fraction?"

Now, said I, Let me be the scholar, and you the Teacher.—Will you explain to me, what is an improper fraction?

A.—A fraction not proper.

Why is it not proper? I asked.

Because a fraction is a part, and an improper fraction is more than the whole.

Very good, I replied, but you are the Teacher, how will I write down an improper fraction?

Write the numerator greater than the denominator.

I did so. Is that an improper fraction?

Yes, sir.

But what kind of a fraction is this? I continued, writing down  $1\frac{1}{2}$ .

Improper, was the answer.

But the numerator is not greater than the denominator.

If the numerator is not less than the denominator, it is an improper fraction, he answered, without a moment's hesitation.

Why is it improper? I asked.

For the same reason, the other is, he answered; it is not a part of any thing; being equal to the whole.

These were the answers of pupils, averaging 10 years old, who were unacquainted with a written definition

Decimal fractions are next taught, and their relation to *vulgar fractions*, by practical examples.

Proportion (or Rule of Three) I teach by practical examples, involving all kinds of numbers, simple, compound, fractional, and decimal. Such rules as Rule of Three in fractions, Reduction of Fractions, &c., are discarded. The pupil who understands Reduction; and cannot apply it to fractions and decimals, has but partly learned it, unless he is deficient in the primary rules of fractions themselves. In either case, I *turn him back* to the weak point; but, in no case teach him by reference. Keep him at the weak point until he has learned it, before he attempts to proceed further.

I frequently give them questions in "Fellowship," "Discount," &c., &c., and after they are solved, refer them to the special rules in the book, and compare them with his work.—If the rules are useful at all, they are only so, when thus illustrated; when they may be pleasing and instructive.

I next take up Interest; and carry out the principle of per centage. As the *Rule of Three* is so readily applied to questions involving Interest, I frequently use it as a medium of instruction. The pupil is expected, however, to be acquainted with the principle of per centage before entering into No. 2.

In many of our books, there are Geometrical questions under special rules; but as no pupil should meddle with Geometrical solutions, until he is acquainted with the elements of Geometry, they will be included under their proper head,—the teaching of Geometry.

The rules for allegation, and progression, are good enough; but like many other rules, of little importance. Their solutions belong rather to general arithmetic, than to special rules.

As to "Double Position," it appears to be a rule entirely useless; and besides, wholly incomprehensible to the young student; who must depend altogether on the book, or the teacher, to know the truth, after he has obtained the result,

by a rule which he cannot understand. True, he may prove it by analysis. So he may, without the supposition; and have the satisfaction of understanding his work. If he cannot analyze it, it is because he cannot understand it;—neither can he understand the rule.

Questions, in "Single Position," although a branch of the "Rule of Three," under which I teach it, when taught at all, admit of beautiful analytical solutions. *Examples:* if I take a bag of corn to the mill, and fetch home 2 bushels,  $\frac{1}{10}$  being deducted for toll, how much corn did I take to the mill.

*Solution:* if  $\frac{1}{10}$  be deducted,  $\frac{9}{10}$  are left. If  $\frac{9}{10} = 2$ , what is one tenth: and what is the whole?

*Example:* if I sell goods for 66 dollars, and gain 20 per cent. what was the cost?

*Solution:* as  $\frac{1}{10}$  of the cost is gained, consequently 66 dollars is  $\frac{11}{10}$ , and 6 dollars  $\frac{1}{10}$ , and the cost, 60 dollars.

*Example,* if by selling a knife for 10 cents, I have 20 per cent., what was the cost?

*Solution:* as he losses  $\frac{20}{100} = \frac{1}{5}$ , 10 cents is  $\frac{4}{5}$  of the cost,  $2\frac{1}{2}$   $\frac{1}{5}$ , and the whole cost is  $12\frac{1}{2}$  cents.

Or, as 10 is the  $\frac{1}{8}$  of 80, which is 20 lost on 100, so  $\frac{1}{8}$  of 100 =  $12\frac{1}{2}$ , is the cost of the knife.

Many other rules are packed in a few pages, in some of our text books, amongst which we find "Annuities," "Combination," "Permutation," "Duodecimals," &c., &c., which need no special rules. The pupil who cannot work Duodecimals without a special rule, should be taught "Compound Multiplication."

In conclusion, I quote another passage from Mr. COLBURN, and recommend it to the attention of all teachers.

"Recitations should be conducted briskly and not suffered to lag, and become dull. The attention of every scholar should be kept on the subject, if possible, so that all shall hear every thing that is said. For this, it is necessary that the questions pass round quickly; and that no scholar be allowed a longer time to think than is absolutely necessary.

"There is one point more that I shall urge; and it is one which I consider the most important of all. It is to make the scholars study. I can give no directions how to do it.—Each teacher must do it in his own way, if he does it at all. He who succeeds in making his scholars study, will make them learn; whether he does it by punishing or hiring, or persuading, or by exciting emulation, or by making the studies so interesting that they do it for the love of it.—It is useless for me to say which will produce the best effects: You may judge of that for yourselves. But this, I say, that he who makes his scholars study, will make them learn; and he who does not, will not make them learn much, or well."

PRACTICAL EXAMPLES OF THE SCHOOL-ROOM, ILLUSTRATING  
THE METHOD OF TEACHING.

I cannot close this Chapter, without giving a few examples in the experience of the practical teacher.

The juvenile class in the arithmetical tables.

*Teacher*—How many quarters in four yards?

Not known.

*T.*—How many quarters in one yard?

*P.*—Four.

*T.*—How many in two yards?

*P.*—Eight.

So proceed to three yards; to four yards, &c.

*T.*—How many yards in sixteen quarters?

*P.*—Sixty-four.

*T.*—Why?

*P.*—Because four quarters are in one yard; and four times sixteen are sixty-four.

*T.*—How many yards in four quarters?

*A.*—After a pause—one.

*T.*—How many in eight quarters?

*A.*—Two.

*T.*—In sixteen quarters?

*A.*—Four.

*T.*—How did you obtain four?

A.—By dividing by four, the number of quarters in a yard.

T.—Your first answer to this question was 64, now it is 4: which is right? and for what reason?

DEMONSTRATION OF THE "RULE OF THREE," TO A CLASS OF PUPILS FROM SIX TO EIGHT YEARS OLD.

T.—If one slate cost 2 cents, what will 25 slates cost?

Place the same name as the answer in the third term. What is the answer to be? slates or money.

A.—Money.

T.—Is the answer to be greater, or less than this third term?

No answer.

T.—What is the answer to be? (repeats the question.) The answer is to be the price of — what?

P.—Of twenty-five slates.

T.—What is the third term, the price of?

P.—Of one slate.

T.—Is the answer to be greater or less than the price of one slate?

P.—Greater.

T.—Is the answer to be greater or less than this term?

P.—Greater.

T.—Then place the *greater* of the remaining two terms for the second term.

A few similar questions will imprint the rule upon their minds better than committing it to memory: and besides, they will understand it.

#### PER CENTAGE.

T.—I bought cloth for 80 cents a yard, and sold it for 90 cents a yard, what is the gain per cent?

*Explanation:* T.—If I gain 10 cents on 90 cents, what do I gain on a hundred cents? By the Rule of Three, what is the 3d term to be?

P.—Gain.

T.—Is the answer to be greater or less than the third term, &c.



Another mode: "I gain  $\frac{1}{10}$ , or  $\frac{1}{8}$  of the cost.  $\frac{1}{8}$  of 100 =  $12\frac{1}{2}$  or  $12\frac{1}{2}$  per cent."

#### QUESTIONS TO MAKE PUPILS THINK.

Bought 4 knives for 20 cents a piece, and 12 forks for a dollar, what is the price of one fork?

If I buy 40 bushels of oats at 50 cents per bushel, and sell them for 60 cents a bushel, and by so doing gain 20 per cent., how many cents a bushel do I gain?

James can run 50 rods a minute, and John can run  $\frac{5}{8}$  of that distance in the same time, how many miles an hour can James run?

From Smith's Arithmetic.—"A merchant bought 26 hogsheads of wine at \$2.00 a gallon, on 6 months' credit; but by paying cash, he got it five dollars a hogshead cheaper; how much did he save by paying ready money?"

#### PROMISCUOUS EXAMPLES.

Reduce  $\frac{5}{8}$  of a shilling to £: or (as the book says) "to the fraction of a pound."

A pupil solves it by some book rule: the Teacher requests him to explain.

P.—I multiply the denominator by —

Stop, said the Teacher, I think, to reduce shillings to pounds, you divide by 20. James, can you do it? said the Teacher.

James does it, and demonstrates it thus—I divided by 20.

Right, said the Teacher.

But, said the first pupil, mine is done the same way.

You told me that you multiplied, continued the Teacher.

Well, persisted the pupil, did not James multiply.

James, asked the Teacher, did you multiply?

No, sir, replied James, I divided.

And how did you divide it?

I multiplied the denominator by the divisor.

Now, William, said the Teacher, addressing the first pupil, Here is the difference in your solutions. You *multiplied* by 20, as you would have multiplied the same fraction, had you been



required to *multiply*  $\frac{1}{2}$  by 20, and thought you had multiplied: whereas you actually divided by 20, without knowing it; and by so doing obtained the correct result. James knowingly divided according to the principles of Reduction, and obtained the same result. James understands Reduction, and knows how to divide fractions: you—neither. He *knows* he is correct; because he understands his work: you do not, because your work is taken from a book or Teacher, and is not understood.

#### MENTAL EXERCISE.

"If I sell an article for \$100, and gain 10 per cent. what did it cost?"

A pupil solves it thus: " $100 - 10 = 90$  dollars, the cost."

I then write down "bought for — sold for —" and ask him to fill the blanks; which he did, thus: "bought for 90, sold for 100."

"To gain 10 per cent. what must I sell it for?" asked the Teacher.

Pupil.—"One hundred dollars."

"How much did I gain?" continued the Teacher.

"Ten dollars," was the reply.

I gained 10 dollars on — what?

On ninety dollars.

Is the gain of 10 dollars on 90, a gain of 10 per cent.?

No, sir, it is more than 10 per cent.

To really gain 10 per cent. on \$90, what must he sell it for?

The pupil calculates it, and answers—"Ninety-nine dollars."

Then, if I sell for 100 dollars, and gain 10 dollars, I gain more than 10 per cent.

Yes, sir.

Your error then, is in calculating the per centage on the selling price instead of the buying price.

Yes, sir.

And, if I sell goods for \$99 dollars, and gain 10 per cent., what did they cost?

Ninety dollars.

How did you obtain ninety?

By subtracting nine, the ten per cent. gained, from the selling price.

Where did you get the 9 dollars?

Ten per cent. on ninety.

But you have not the ninety to work with: and to subtract 10 per cent. from 99, as you did from the hundred, would not leave ten dollars. In the former case, you subtract 10 per cent. of the selling price, now you subtract 10 per cent. of the buying price. Now, we will return to the first question. 100 dollars is the selling price: I have gained 10 per cent. on what? the buying price, or selling price?

The buying price?

But you have taken it from the selling price, and made 90 dollars, the buying price, upon which, according to the question, you gain 10 per cent. which amounts to 99 dollars: not a hundred. But, leaving the first question, and taking up the last: 99 is the selling price, he has gained 10 per cent. what is the cost? We know it to be 90; but 10 per cent. of 99 subtracted from it, will not be 90; neither is 10 per cent. of 99, to be subtracted; but 10 per cent. of 90, to be subtracted from 99. But you have no right to the 90; that is the number to be found: and, in the first question, you have not the buying price, and consequently cannot use it. Now, how are you to obtain the 10 per cent. on a number, which you have not?

The pupil is at a stand. His curiosity is awakened.

"Well," continued the Teacher, "you are at a loss to know how to obtain the per centage of an *unknown quantity*. Mark this: an *unknown quantity*. Suppose a number."

"What number will I suppose?" asked the pupil.

"Any number. A hundred is an easy number for per centage calculations: but any other number will answer.—Take \$50. That is, suppose fifty dollars to be the buying price. Now if you gain 10 per cent. what is the selling price? Work with the supposed number, as if it were the true one."

The pupil works it, and makes the selling price fifty-five dollars.

"Now," I continued, "here is a plain question of the 'Rule of Three.' If, when 50 is the cost price and 55 the selling price, I gain 10 per cent. what must be the cost, to gain the same per cent. when the selling price is \$99, or \$100, or any other number?"

The pupil states it on the slate, according to the rule, thus :

Selling price.		Selling price.		Cost.		Cost.
\$55	:	\$99	::	\$50	:	\$90
\$55	:	100	::	\$50	:	90 $\frac{1}{11}$ \$90.90 $\frac{1}{11}$ .

This is the pupil's first idea of "Position," or "Discount." Such questions, however, as before stated are mostly solved by analysis.

#### EXERCISES ON SLATE :

"Multiply  $\frac{29}{734}$  by 38."

The pupil could not work this example: because he could not understand it.

I simplified it.

Multiply  $\frac{1}{3}$  by 2,  $\frac{1}{3} \times 2$ . He still could not do it.

I simplified it further. Multiply  $\frac{1}{2}$  by 2,  $\frac{1}{2} \times 2$ . "How much is two halves?"

Answer—"One."

"How did you obtain the one?"

"I know that two halves are one." Here was the end of his explanation. Here was a starting point.

"How many apples are two times one apple?" Thus,  $\frac{1}{\text{apple}} \times 2 = \text{how many?}$

Ans.—"Two."

"Two—what?"

"Two apples."

$\frac{1}{\text{apple}} \times 2 = \frac{1}{\text{third}} \frac{1}{3} \times 2 = \text{what?}$   $\frac{2}{\text{apples}}$ . Let this principle be carried out in numbers.

Ans.—"Two thirds,  $\frac{2}{3}$ ."

$\frac{1}{\text{half}}, \frac{1}{2} \times 2 = \text{what?}$

Ans.—"Two halves,  $\frac{2}{2} = 1$ ."

$\frac{\text{Five}}{\text{sixths}}$  multiplied by 2,  $\frac{5}{3} \div 2 = \text{what?}$

Ans.—Ten sixths.  $\frac{10}{6}$ .

Twenty-nine, seven hundred and thirty-fourths, multiplied by two,  $\frac{297}{34} \times 2 = \frac{594}{34}$  : and upon the same principle proceed until the pupil understands the first question,  $\frac{297}{34} \times 38$ , when he will find no difficulty in doing it. If, when he obtains the result, which will be an improper fraction, he cannot change it to its proper terms, (as was the case in this example) turn him back, and keep him there, until he fully understands an improper fraction.

"What number is that which being multiplied by 15, will make  $\frac{3}{4}$ ?"

It is not understood, and I chalk on the black-board—  
 $15 \div = \frac{3}{4}$ .

It is now understood : but the principles are not sufficiently clear. I chalk immediately under the former,  $8 \times = 16$ , and they all cry out—"Two."

"Where do you get the *two*?"

"Eight two's are 16."

I change it again, " $15 \times = 210$ ." Thus I proceed until the principles of multiplication and division are understood, as applied in these questions.

"But," says one, " $\frac{3}{4}$  cannot be divided by 15."

The principle is now understood, but not division of fractions. This is the weak point ; and the pupil must apply himself to that until he is master of it.

"What number is that which being divided by 15, will make  $\frac{1}{6}$ ?"

Illustration:  $15) \frac{1}{20}$ .  $15) \frac{1}{2}$  : and proceed as in the former example.

I once visited a school, some of the pupils of which had been through *Davies*, *Smith* and *Emerson*. I gave them the following question:

"If  $4\frac{1}{2}$  yards of cloth which cost  $\frac{1}{8}$  of  $\frac{1}{2}$  of  $6\frac{1}{2}$  dollars, are to be lined with muslin of the same width, at a cent a yard, what is the cost of the muslin?"

In the solution of this question, there is nothing to do, but

to think? When it is understood, it is done. A pupil should be taught to think, as well as to understand. If every question is so simplified, that it requires no mental labor to understand it, the pupil will not soon learn to think himself.

It is probable that most of the pupils could have solved this question had they taken the trouble to *think*; or had they been furnished with a slate and pencil. But they were required to do it mentally: and they failed.

In a school which I once visited, I witnessed the following exercise.

First Class in Arithmetic.\*

"If a man buy goods for twenty dollars, and sells them for twenty-five dollars, what will be the gain per cent?"

The question was solved immediately, by one of the class: a small boy.

,"How did you do it?" asked the Teacher.

"I made a fraction."

"How did you do it?" asked the Teacher.

"I made a fraction, by writing the gain or loss for a numerator, and the cost for the denominator; then changed it to a decimal."

"Why did you do it in this manner?" continued the teacher.

"Because the rule says so," answered the boy.

I give this example, to compare it with the manner in which some of us old Fogies were taught, and also with the newer mode. Most of us remember when all that was required of a pupil in arithmetic, was, for him to do the question and show it to the Teacher. No explanation was required, and none given. I allude to those termed *good schools, where rules were committed to memory*. We have also seen schools where nothing was required but, "Master, it brings the answer," let the operation be right or wrong.

The comparison with such schools was favorable.

"I never permit my scholars," said this Teacher, "to do a

\* Pennsylvania School Journal.

question without repeating the rule by which it is done.—They must know the rule by heart, before I permit them to begin the question. Every rule in the book,” he continued, with emphasis, “must be committed to memory.”

I requested permission to ask a few questions : which was cheerfully granted.

“Well, James,” said I, “will you explain your question to me?”

“Yes, sir,” replied the boy. “I made a fraction by writing the gain or loss, for a numerator, and the cost for a denominator ; then changed it to decimal.”

“Why did you make this fraction?”

“Because the rule says so.”

“But why does the rule say so?”

“Don’t know.”

“I will now give you a question,” I continued ; “I have four marbles:—if I give two away, how many will I have left?”

“Two,” immediately answered the boy.

“How did you get the *two*?”

“I subtracted two from four.”

“Why did you subtract?”

(No reply.)

“Did you subtract,” said I, because the rule says so?”

“No, sir.”

“Let me do it for you,” said I, taking the slate, and dividing four by two. “Is this right?”

“No, sir,” replied the boy, quickly.

“But you see,” said I, “that I have the same answer?”

“But,” replied the little fellow, now becoming animated, “it isn’t right for all.”

“Let me read this rule,” said I, looking on the slate, “divide one number by the other and the result will be the answer.”

The little boy stared.

“That rule is not here,” I continued ; “but suppose that it were, would it be right?”



"No, sir."

"What reason can you give for thinking that it is not right?"

"*I know it is not right,*" he answered with emphasis.

"And do you know that this rule in the book is right?"

Pupil, hesitating, "It brings the answer."

"So does my rule, dividing by two."

"But, the master says mine is right."

"So it is," said I, "your master is right. But would it not be better for you to *know* it to be right, without depending on your master? Wouldn't you like to know that your answer is right, without looking at your book, or asking your master?"

"Yes sir, I would."

"Well then, what is per cent?"

"Per hundred," was the reply.

He had faithfully committed to memory all definitions.

"Six per cent. then, means—what? Six dollars per hundred?"

"Yes sir."

"Six gained on every hundred."

"Yes, sir."

"Well, then, what is the question. What did he gain by the sale of the goods.

After some explanation the pupil answered—"Five dollars."

"He gains five dollars on what,—the selling price, or buying price."

This question was also answered, when fully understood.

Well, I continued, what does your question ask.

It asks what is the gain per cent, replied the boy.

And what is per cent.

Per hundred.

If then, said I, he gains five dollars on twenty dollars, how much does he gain on — fifty. Is that it.

No, sir, on a hundred.

Well then, I continued, if he gains five dollars on —, I paused and looked inquiringly.

On twenty, answered the pupil.

Well, then, if he gains five on twenty, what does he gain on — a hundred. Is that it.

Yes, sir.

Very well, can't you answer that. If you gain five on twenty, how much is it on a hundred.

After a short pause, the truth flashed on his mind, and he answered, *Twenty-five*.

Are you sure you are right.

Yes, sir.

Why. Because it is the answer.

No, sir, I know it is right.

Because the rule says so.

No sir.

Because your Teacher says so.

No, sir.

How, then, do you know.

*I know it*, was the emphatic reply.

Mark that, Fellow Teachers: HE KNEW IT. This boy's mind was "*waking up*."

I did not question him further. Here was the first process of thinking; and I would not confuse him with further questions.

We select the following examples from PAGE'S "Theory and Practice of Teaching," which show that the "*drawing out process*," carried to an extreme, is as bad as the "*pouring in process*."

*Example 1st.*—"John," says the Teacher, "what is the number to be divided, called?"

John hesitates.

"Is it the dividend?" says the Teacher.

"Yes, sir, the dividend."

"Well, John, what is that which is left after dividing, called? The remainder—is it?"

"Yes, sir."

A visitor now enters the room, and the Teacher desires to show off John's talents.

"Well, John, of what denomination is the remainder?"

John looks upon the floor.

"Isn't it always the same as the dividend, John?"

"Yes, sir."

"Very well, John," says the Teacher, soothingly, "what denomination is this dividend?" pointing to the work upon the board. "Dollars, is it not?"

"Yes, sir, dollars."

"Very well; now what is the remainder?"

John hesitates.

"Why, dollars too, isn't?" says the Teacher.

"Oh yes, sir, *dollars!*" says John energetically, while the Teacher complacently looks at the visitor, to see if he has noticed how *correctly* John has answered.

*Example 2d.*—Class in "Colburn's First Lessons."

"Where do you begin?" said the Teacher, taking the book.

*Pupils.*—"On the 80th page, 3d question."

*Teacher.*—"Read it, Charles."

Charles, (Reads.) "A man being asked how many sheep he had, said that he had them in two pastures; in one pasture he had eight; that three fourths of these were just one-third of what he had in the other. How many sheep were there in the other?"

*T.*—"Well, Charles, you must get the one-fourth of eight, must you not?"

*C.*—"Yes, sir."

*T.*—"Well, one-fourth of eight is two, isn't it?"

*C.*—"Yes, sir, one-fourth of eight is two."

*T.*—"Well then, three-fourths will be three times two, won't it?"

*C.*—"Yes, sir."

*T.*—"Well, three times two are six, eh?"

*C.*—"Yes, sir."

*T.*—"Very well. (A pause.) Now the book says that this six is just one-third of what he had in the other pasture, don't it?"

*C.*—"Yes, sir."

*T.*—"Then, if six is one-third, three thirds will be—three times six, won't it?"

*C.*—"Yes, sir."

*T.*—"And three times six are—eighteen, ain't it?"

*C.*—"Yes, sir."

*T.*—"Then, he had eighteen sheep in the other pasture, had he?"

*C.*—"Yes, sir."

*T.*—"Next, take the next one."

At this point I interposed, and asked the Teacher if he would request Charles to go through it alone.

"Oh, yes," said the Teacher, "Charles, you may do it again."

Charles again read the question, and—looked up.

"Well," said the Teacher, "you must first get one-fourth of eight, musn't you?"

"Yes, sir."

"And one-fourth of eight is two, isn't it?"

"Yes, sir."

And so the process went on, till the final eighteen sheep were *drawn out* as before.

The Teacher now looked round, with an air which seemed to say, "Now, I suppose you are satisfied."

"Shall I ask Charles to do it again?" said I.

The Teacher assented.

Charles again read the question, and—again looked up.

I waited and he waited, but the Teacher could *not* wait.

"Why, Charles," said he impatiently, "you want one-fourth of eight, don't you?"

"Yes, sir," said Charles, promptly; and I thought best not to insist further at this time upon a repetition of "*Yes, sir,*" and the class were allowed to proceed in their own way.

These few examples are deemed sufficient to show the modes of teaching used in some of our schools. That they may be beneficial to Teachers, especially the inexperienced, is the wish of the compiler.

Many more might be added, but these may serve to give an outline of the *modus operandi* of this branch of a common school education.

## CHAPTER V.

### THE TEACHING OF GEOGRAPHY.

ELIAS SCHNEIDER, Superintendent of Public Schools at Pottsville, Pa., says in the Pa. School Journal:

"The true method of teaching Geography is to present to the mind and imagination of the pupil, a vivid and living representation of the geographical features of the earth, which will, as much as possible, take the place of the real and actual objects themselves."

To do this successfully, it is necessary that the school-room be furnished with large and well delineated maps.

For teaching Geography, we need not say that nothing is better than outline maps; whether used in chanting, singing, or otherwise, every Teacher should judge for himself.

But leaving this disputed point, the maps themselves are decidedly the best means for instruction in local geography.

With the use of the outline maps in the school, none of the pupils can be ignorant of Geography. By having the map in the "*mind's eye*," he will also have impressed upon his mind, the figure of different parts of the Earth's surface:—the situations of towns, courses of rivers, &c., which these maps represent.

Descriptive Geography is as easily taught as history, or any thing else descriptive.

We know that such description as

"The rocks along the south coast of France, are covered with a pretty hanging bush, with a large and delicate white blossom, having a number of fine purple filaments:—this is the caper bush,"—(and in as plain and simple language as this,



can any description be given,) is interesting to children. So is the following: "The word *archipelago* means a sea full of islands. A great many currants grow in some of the islands of the Grecian Archipelago. They grow on low bushes, in bunches, like grapes."

But a dull and prosy account of the imports and exports;—or "*Grenada, Seville and Cordova, were once Moorish Capitals; Malaga and Alicant export Wines and Fruits; Bilbao, Wool; and Santander, Grain and Flour. Valencia is noted for Silks; Toledo for sword blades; Salamanca for its University; and Almaden for its Quicksilver,*" is not interesting. The child who has a good verbal memory may remember the words so as to repeat them at recitation as a pupil of mine once answered that "Commerce and Manufactures is the Governor of the State, and George Wolf the occupation of the people of Pennsylvania:" and not remember them until the next recitation; but he has learned nothing more than he who *didn't know his lesson*, because he could not remember words without meaning.

Most children remember that the city of Venice is situated on 72 small islands, connected by upwards of 400 bridges, with canals for streets, boats for carriages, &c.; and that Holland is so low a country, that embankments are built around it to prevent its being overflowed by the sea; and the description of the Malstrom on the coast of Norway, and, of the Bay of Fundy, whose tides rise to the height of 60 feet, as described in our text books, and so they would any other description, if described in an equally interesting manner: and this the skillful Teacher can do.

The way to teach description of any kind, is to make it interesting to the pupil: and the only difference in this respect, between descriptive Geography and History, is that the latter abounds in interesting incidents; while the former is mostly dry, and uninteresting. Now, it seems to be the province of the Teacher to make it interesting. How is this to be done? Let some interesting incident be related in con-

nexion with it ; and the pupil will readily remember it. We all know the eagerness of children to listen to stories. For instance, in describing a coal region, relate some entertaining anecdote, a visit to the mines, some 'hair-breadth' escape of the miners, or any thing connected with them in a 'Peter Parley' style : and if your pupils do not eagerly *drink in* your words, they are different from any children I ever saw.

Mount Vesuvius, Etna, St. Helena, and many other places, have interesting historical incidents connected with them, which will impress them both historically and geographically upon the pupil's mind. In short, some striking event may be connected with every geographical description, whether of soil, climate, products or manufactures. If no real incident is in the Teacher's memory, his mind must be barren whose inventive faculty cannot supply the place of a real incident, by one of imagination : who cannot please children by an anecdote :—being careful, however, to distinguish between the fictitious and the real. Philosophy, Chemistry, Physiology, History, and Geography, abound in incidents, pleasing and instructive. The kite of Franklin, his electrical bells, and hundreds of amusing incidents connected with science, form a never-failing fund of instruction and delight, not only to the child, but to the more advanced pupil.

"It is an excellent plan," says Mr. PAGE, "to keep a common-place book of considerable size ; different portions of it being set apart for the different subjects upon which he is to give instruction. Under the heads of Geography, History, Arithmetic, Grammar, &c., &c., reserving quite a space for miscellaneous matter. Under these different heads, let him note down from time to time, such illustrations as he may hear of those respective sciences, anecdotes, incidents &c., &c., to be used from time to time in his school."\*

Thus we see that by means in the power of a Teacher, de-

\* Mr. JOHN BECK, the Principal of the Litiz Academy, informed me that he had practised this mode for years, with success. The manner in which he relates his anecdotes to his pupils, in true *Peter Parley* style, always secures him attentive listeners.

scriptive Geography may be made a very interesting study. Of course, it is to be understood that as the pupil advances, he should be taught physical Geography: the nature of the zones, climate, motion of the earth &c., &c., but this part of the science is of itself so full of interest, that no Teacher who himself understands it, can fail to make it interesting to his pupils.

I will close this Chapter by the opinions of a distinguished Teacher on this branch of teaching, JAMES G. CARTER.

"While I hold my own opinion on this subject," says Mr. CARTER, "and claim the right to state, to explain and to vindicate them; if others hold different opinions, they have the same rights."

With this apology, he proceeds: "The pupil, by some of the most approved systems, is presented in the onset with a map of THE WHOLE WORLD, reduced to the size of a hat crown. In connexion with this, he is directed to read (and sometimes commit to memory) a description of the largest rivers, mountains and seas; and also to learn some accounts of the character and manners of the principal nations. Perhaps he will soon be required to learn the amount of exports and imports, of the most commercial nations, to the accuracy of a farthing.

"Some, not content with presenting the whole earth, to the first and single glance of the young learner, and, as if determined to push the absurdity of the plan to the utmost, have given the whole system to the child, for his first lesson in Geography. This is called setting up landmarks, and getting a general knowledge of the subject; but, so far from that, in my view, it is getting no knowledge at all. It is only a confusion of words, without any definite meaning attached to them whatever.

"The subject is begun precisely at the wrong end. If it is addressed to the understanding of the pupil, this arrangement seems to presume that he will take a deeper interest in, and better comprehend the general features of the world, embracing the largest mountains and rivers, and the characters of

nations, of whose existence he has, perhaps, never before heard, than the roads, hills and rivers, of his own neighborhood, and the boundaries of his own township, county or State. Besides, upon the strictest philosophical principles, it is perfectly demonstrable that he can get no adequate idea of the magnitude of the largest mountains and rivers of the world, except by comparing them with the mountains and rivers which he has seen; and of which he has formed some definite idea. 'A river, three times as wide as our river.' This is the natural language of children; and it is philosophical language. In forming a conception of a distant mountain or river, which we have never seen, we proceed precisely as we do in forming a conception of any other magnitude. We fix upon something of the same kind, which is known as a unit of measure; and then compare, and discover the relation of what is known with what is unknown. So the child, could form some idea of a mountain twice as high as a hill before his eyes; or he could form a tolerable conception of a river three times as broad as the brook which runs before his father's door, or the river he may, perhaps, have seen in a neighboring township; but talk to him at once of a mountain many thousand feet high, and a river a hundred miles wide, and I am much mistaken if he forms the least conception of what he is told."\*

Singing and chanting the names and situations of places, I have found beneficial in impressing them on the memory: but I do not contend for it. The only advantage gained by this mode is, that by a simultaneous recitation, the whole school is taught in less time than one pupil can be taught by other methods. It is a pleasing change; and relieves the mind from the monotony of the school-room. Other exercises will also do this; but as singing is admitted to be as effectual in relaxing the mind, as any other exercise, if in connexion with this, the names of places, their situations, the capitals of countries, arithmetical tables, or any knowledge which de-

\* This is also the opinion of other distinguished Teachers, SCHNEIDER PAGE, and others.

depends entirely on the memory is learned, it is an actual gain, admitting it to be not the best method of teaching. It may be that "the memory is not strengthened by such exercise:" but it is certain, that pupils of six years old taught by it can *answer* more respecting local Geography than many Teachers are able to answer, so far as regards *mere memory*; and further than that, no Teacher contends for; and this is all many Parents or Directors ask for.

If this exercise be practised in connexion with outline maps, the situations of countries, and their towns, rivers, mountains, &c., will be impressed on the memory in much less time and with less labor than by any other method. We admit that this method is defective: but as it is merely a pleasing variety, in which the whole School is interested, unless it is an actual hindrance, no valid objections seems to be against it. The pupils all soon know their tables-capitals of every country in the world, and various other, items of knowledge, many of them, before they can read a word: and better too (so far as regards mere memory) than when taught by any other method. In fact, any thing that depends on the memory alone, can be taught to the whole school by the *concert* method, in less time than it can be taught to one pupil alone. I know that I differ with some experienced Teachers; but if you have the maps, (or even atlases) the trial will cost neither you nor your pupils any thing but a pleasing and exhilarating exercise.

Another very effectual method, and we might say one of the most effectual, as imprinting a "vivid and living representation of the Geographical features of the earth," upon the pupil's mind, is the drawing of maps. Not only measured representations of portions of the earth's surface, but frequent chalk drawings on the black board. Those who practice this exercise, soon become able to delineate, with tolerable exactness, the outlines of States and Countries, their towns, rivers, mountains, &c., without having the map before them.

In short, the Teacher who, himself, is well acquainted with



Geography, cannot fail to make it interesting to his pupils, if he tries; and being *interested* in it, they *will learn*. But if he has to search the map himself, to assist the pupil in finding the location of towns, rivers, islands, capes, &c., it soon becomes a wearisome up-hill exercise to both Teacher and pupil. If the Teacher himself is acquainted with physical or descriptive Geography only as he looks over each day's lesson in the text book, how can he be interested in it himself, and how can he expect the pupils to be interested, or to learn. It is probably true, to a great extent, with those Teachers who fail in teaching any branch, that the *Teacher himself*, is deficient in knowledge. Although it by no means is a corollary that all Teachers who have the requisite knowledge, are able to teach, without being acquainted with the *art* or science of teaching.



## CHAPTER VI.

### THE TEACHING OF GEOMETRY AND ALGEBRA.

My reason for including Geometry and Algebra in one chapter, is that he who can teach Arithmetic thoroughly, cannot fail in any mathematical branch he is acquainted with.—Yet, as the elements of Geometry and Algebra, are connected with mathematics in general, a few words on the teaching of them may not be unnecessary. As Algebra is but Arithmetic by symbols, if the pupil is acquainted with the principles of Arithmetic, he is already acquainted with the elements of Algebra. Algebra being pure analysis, rules seem to be almost unnecessary. There can be but one mode of teaching Geometry. If a pupil merely copies the figures from the book, he is not *learning it*. Mensuration, Surveying, &c., are but the practical application of the principles of Geometry.

In teaching these branches, I lay down two general rules, of which all other rules are but modifications, viz: multiply the length by the breadth, to obtain an area,—and multiply the area of the end by the length to obtain the solidity. These rules are thoroughly explained. A triangle being demonstrated (by means of diagrams) to be half of a parallelogram of the same length and height, to calculate its area, needs no further rule.

The mean length and breadth of a trapezoid is also easily demonstrated by a diagram. A trapezium or any irregular figure bounded by straight lines, is divided into triangles.—So with regular polygons. As the circumference of a circle is (in practical application) an infinite number of straight lines, it is the sum of the bases of an infinite number of

triangles with the length of the radius for their perpendicular height: consequently the sum of the areas of the triangles, is the area of the circle. Solids are demonstrated by blocks or by dividing an apple or potato.

F. J. THAYER says: "It is the peculiar property of Geometry, to be adapted to every capacity. Children of from six to ten years of age, may be as much benefitted by it as advanced pupils: only the methods of instruction must vary, according to the age and capacity of the pupil."

Practising upon this theory, our pupils are taught the elements of Geometry, at an early age: sometimes, even before they commence Arithmetic, or even reading. By means of black-board and chalk lines, angles, surfaces and solids,—triangles, quadrilaterals, circles, and other geometrical figures may be taught to a class of very young pupils, in a short time.

I have frequently heard pupils in Mensuration, when asked to explain their calculation, answered that they had obtained the area of a trapezoid, or rhombus; but what a trapezoid or rhombus is, they could not tell. Sometimes, too, the figure was even constructed; but, further than its being the figure in the book, they could not tell. The calculation was performed by *rule*, but having no knowledge of what they were calculating, it, of course, was not understood. It is unnecessary to say, that a pupil, with a knowledge of even the *elements* of Geometry, would not thus work in the dark.

The remainder of this chapter, will be practical examples of the school room.

When I was a pupil in Algebra, I was taught to work Quadratic equations by the following rule in Bonnycastle's Algebra.

"The value of the unknown quantity is always equal to half of the coefficient of the second term of the equation, taken with a contrary sign together with  $\pm$  the square root of the square of this number and the known quantity that forms the absolute or third term of the equation."

Of course, I did not understand a word of it.\*

The following is much better.

"Take half the coefficient of the second term, square it, and add the result to both members of the equation. Then extract the square root of both members of the equation; after which, transpose the known term to the second member."

I think, however, both of them useless.

The following scene lately occurred, in my school room.—The pupil had the following equation on his slate.

$$x^2 + 8x = 84.$$

He was well acquainted with analytical principles; but this equation was something new. What was he to do with the  $8x$ ? He had tried every method, he could think of, before he came to me. This was his first complete quadratic equation: but as he had been taught to pay no regard to the headings of the book—he knew not that he was in a new rule. He explained to me his difficulty.

"Extract the square root of each side of the equation," said I, with apparent carelessness.

"The root of a binomial cannot be obtained," he instantly replied. "Suppose you add some number to it to make it an even square," I continued, apparently paying but little attention to him; and thinking that his knowledge of the binomial theorem would teach him to complete the square.

But, he seemed lost.

"I cannot find a number" he continued, "and if I could, it would have to be added to the other side also."

"Well, that could be done; could it not?"

"Yes, I suppose it could, by involving the second side."

"How would it involve the second side?"

"By making a binomial of it," was the prompt reply.

"Are you certain of that?" I asked.

"Well, I think so," he said, looking intently at the equation.

"Try it," said I.

\* This can be demonstrated, but what Teacher does it?

"I would," he replied, if I could find a number to complete the square.

"Try sixteen," said I.

It was done, and the square root extracted.

"Now," said I, "add 16 to the other side."

It was done.

"Where is your binomial?" I asked as he stood astonished at its simplicity.

"Where could you find a more beautiful square? and even if a sured, you could use decimals."

"Where did you get the sixteen?"

"Ay, there's the rub," said I, "had you understood thoroughly the binomial theorem, you would not ask."

Having now come to the point, where the book begins, it is unnecessary to repeat more of the scene.

I once had a pupil, who having tried in vain for the number to complete the square, seemed satisfied with the number I gave him, without inquiring how I obtained it. The next question presented the same difficulty, and was settled in the same manner; the Teacher finding the required number.

The next square was completed similarly; the pupil having studied in vain for the *number*. Had he been able to find the number, even by guessing, or by repeated trials, he would have been satisfied. He cared not for principle. All he cared for was to get the *answer*: and I resolved to give him a surfeit of guessing. Question after question was tried in vain, by the *persevering* pupil, and as each successive square was completed by the Teacher,

"The more and more his wonder grew,"

how the Teacher obtained the number so quickly; he still thinking that I obtained it, by the same process as he had vainly tried. At length, after having tried nearly every question in the book, he exclaimed disparagingly,

"Mr. Lamborn, how do *you* find the number so quickly?"

"You mean, perhaps," I remarked, "how I obtained it? for you can find it as quickly as I."

"I can!" he exclaimed in surprise, "how?"

"The square of half the coefficient of the second term of the first member of the equation, is always the number required," I replied: "which you can obtain as easily, and as quickly as I can."

"Why did you not tell me?" he asked in a reproachful tone.

"Because," I replied, "you did not ask me."

Although this answer was not altogether satisfactory to him, he needed not to be told again what number would complete the square.

I once took charge of a school, in which was a class in Geometry nearly *through the book*: in the teaching of which occurred the following scene:

One of the pupils has constructed a triangle, whose angles are 20, 30, and 40 degrees respectively, taken from the scale of chords; and laid off on the '*chord of sixty*.'

"Why did you use the chord of sixty?"\*

"Because the rule tells me to do so."

"What is a degree?"

No answer.

"Why did you use sixty degrees?" I repeated.

"Because 60 degrees is the radius of a circle."

"Is 60 degrees the radius of any circle, whether great or small?"

"No, sir; the radius of a large circle is greater than that of a small one."

"What is the length of a degree?"

"Sixty-nine and a half miles."

"Is the length of a degree in the circumference of a Grindstone,  $69\frac{1}{2}$  miles?"

"No, sir."

"What then is a degree?"

"The 360th part of a circle."

"Of any circle? whether large or small?"

\* The answers were given by different members of the class;—varying in age from twelve to eighteen years.



"Yes, sir."

"Has a degree, then, any definite length? for you know, the 360th part of one circle, is much greater than the 360th part of another circle." The class could proceed no further. They evidently did not understand their subject.—The chord of 60 degrees was used in the measurement of angles, because the *book said it*: the same book also telling them that *60 degrees was the radius of any circle*.

At length one of the older pupils, replied:

"This question has often puzzled me. I am told to take 60 degrees from the scale, because the radius of every circle, whether large or small, measures exactly 60 degrees."

"Sixty of its own degrees," replied the Teacher, "i. e. sixty degrees of the circle which it describes."

"But," continued the pupil, "the radius which we use from the scale of chords, will describe a circumference of but one length."

"Are all scales of chords, alike in length?" asked the Teacher.

"I suppose so," answered the pupil.

"Then," continued the Teacher, "all circles must be alike. But, as I before told you, a radius of a circle, measures exactly 60 degrees of that circle, or the 6th part, and therefore has no definite length; neither has a degree, which is the 360th part of a circle, large or small; one of the earth's circumference being in length about  $69\frac{1}{2}$  miles."

"But, all the scales we use, are of the same length;" said another pupil.

"That is because they are all from the same stamp; but all scales are not alike; neither does it matter whether you take the 60 degrees from a scale at all. The scale is merely a convenience. An angle is measured by the arc of any circle, whose centre is the point of the angle; and the radius of any circle is sixty degrees. Hence it follows that any number of degrees, of the sixty with which an arc is de-



scribed, measured on that arc, is the measure of the angle.\*— Thus 90 degrees of any circle, is a quadrant, measuring a right angle; 45 degrees half a right angle, &c., &c.; 60 of the same degrees being always the radius of the circle."

This explanation was accompanied by diagrams. Angles of different sizes, were thus demonstrated, until the class understood the subject.

The whole theory of teaching Geometry, with the science of measuring, being, as the teaching of Arithmetic, *thorough explanation*, it is unnecessary to prolong this chapter.

\* The difference between the chord of an arc, and its length, should be thoroughly explained, as well as the mode of constructing a scale of chords.

## CHAPTER VII.

### HOW TO INCREASE YOUR SALARIES.

Hon. THO. H. BURROWES, in an address to the Lancaster County Educational Association, (October, 1851,) laments the want of a "fair compensation to the faithful 'breakers of the bread of knowledge' which they so richly deserve." \* \* \* "Nor are you, Teachers," he says, "without blame in this matter. Your fault has been a want of faithfulness to yourselves, and, through yourselves, to the public at large, and to the rising generation."

Bishop POTTER, in an address delivered at a meeting of the same Association, held in January, 1852, uses the following language: "Remember that your best reward comes not from your employers. Those who are to give you your most valuable recompense, are not the parents, or directors, of your district. They are the little ones. They have been brought to you, as the 'little ones' were to Christ that you, too, may bless them: and in *them*, you will find your reward."

This is true. The Teacher should look for a higher reward, than money: but how many of the 10,000 Teachers of Pennsylvania would be satisfied with this reward alone? They demand something more. "The laborer is worthy of his hire." It is not to be expected that school Teachers should be more self-denying and philanthropic than the "rest of mankind." Nor is it right that they should. Those who receive the benefit of their services should pay for them their equivalent.

Yet it must be confessed that one great cause of the incompetency of the Teacher's salary is the incompetency of the Teacher himself.

Mr. PAGE says: "The evil complained of is a mutual one \* \* \* so the remedy must be mutual; the public must be enlightened, and Teachers must be improved. But there must be also something to warrant the higher rate. We cannot expect the people to pay more until they find an article worth more."

You cannot expect people to pay for a thing, until they know its worth: and many Teachers are worth no more than the small pittance they receive. Their patrons are satisfied with their services. They are satisfied with an inferior article, and cannot be expected to pay for a good one, without knowing its worth. Let good Teachers make themselves known and valued, and they will be paid. It is true, good Teachers are often poorly paid: but in most cases it is when their services are not appreciated. His patrons do not pay him as a good Teacher, but as a *school master*: a person unfit for any other employment: and before they have had time to know his worth—he is off to another district. Again he demands a salary in accordance with his worth; again is refused. *School masters* can be obtained for less, and he is but a *school master*. Can you blame them for not paying more than the *market price* for an article? Had he remained at his former situation another term, he, perhaps, would have made his merits known and appreciated.

If a man wishes to sell a superior article, he must first make known its merits. A farmer could not be expected to pay \$50 for a plow, when he can get one for \$20, unless he is convinced that the one is worth \$30 more than the other: and the inventor has no right to complain because the farmer is not willing to pay more for the good plow than for the cheap one. Neither has the Teacher cause for complaint because the school district will not pay for what it does not appreciate. Those who appreciate a good article, and who wish to purchase it, are willing to pay for it. Those who are satisfied with a cheap article, cannot be expected to pay for a good one.

Fellow Teachers, let us make ourselves known. Already

are our services beginning to be known and appreciated. But to be known as good Teachers, we must be good Teachers. And it is a lamentable fact, that most of the complaints of incompetent salary, have been uttered by those who are themselves incompetent. Let us improve ourselves; let us "respect and honor ourselves, and we will be respected,"—and be better paid.

There is now a growing disposition, on the part of the people, to pay the faithful Teacher. The maximum salary is rapidly increasing throughout the State. And what is the cause of the little increase? The Teacher himself. And "if a Teacher fearlessly do that which is right, he may expect to be appreciated by the intelligent and liberal portion of the community." Let us, then, endeavor by the silent, steady labors of the school room, to cause our patrons to appreciate our worth.

Mr. PAGE, says: "Talents and attainments must be in advance of compensation."

Mr. BURROWES says: "Many Teachers receive quite as much compensation for their services as those services are worth. It is the low grade of qualification, that keeps down their compensation, more than any other cause; and it will be improved qualification, more also than any other cause, that will effect the just remuneration of the Teacher's toil. This general law, like all general laws of society, operates justly on a large majority of cases, within the sphere of its action.—But, like all such laws, it produces hardship in particular cases. Thus, while the great mass of ill-qualified, transient Teachers are paid quite as much as their defective or careless services are worth, the small number of faithful, devoted, self-sacrificing, permanent Teachers are rewarded according to the same standard, and are therefore deprived of their just rights. As inadequate compensation is caused by the number of ill-qualified Teachers in the profession, so we shall find it to admit of but one remedy—the elevation of the profession in qualification."

This work is begun. Let us continue it, and we will succeed.

“There is a tide in the affairs of men,  
Which, taken at the flood, leads on to fortune.”

Now is that *flood* in the Teacher's *tide*. The first field of his labor is—his school. The second is—his district, township, and county. “The fields are already white to the harvest. And, in the language of a cotemporary, “there never was a brighter prospect before us.”

Can you believe that farmers who care so much for the comfort, the convenience, and the health of their horses, their oxen, and their cows, do really care less for their children? Certainly not. They are satisfied with an inferior Teacher, because they are ignorant.

De you believe that farmers who spend thousands for the comfort, convenience, and health of their horses, would refuse or neglect to pay for the comfort, convenience, or health of their children? Did they know that their school houses were the abodes of disease, misery and suffering, how long, think you, would it be before they would be razed to the ground?

Fellow Teachers, do your duty. Qualify yourselves for your calling: gain the confidence of your patrons, convince them that there is a difference in the quality of the article: and you will be paid in accordance with your worth.

As a last resort, if school directors will not support you, stand on your rights. In these days of educational advancement, a good Teacher is always supported. Start a school of your own; you will succeed; and the directors gladly solicit your return.

## CHAPTER VIII.

### MISCELLANEOUS.

For the purpose of making a small book, and not because the 'Theory and Practice' of teaching is more than *begun*, are the remaining branches of an English education crowded into this chapter. Nor are they less important than those discussed in the preceding chapters. If, however, this small work prove acceptable to my fellow-teachers, it will be enlarged in a future edition.

Let THOROUGH EXPLANATION be the Teacher's watch-word, and all difficulties will disappear.

Some pupils have a peculiar talent for a particular branch, although they may be dull in others. If you succeed in interesting him in that, (which you surely can,) it is the entering wedge to his education.

In teaching the *Natural Sciences*, I depend more on oral explanation, than on committing to memory, lessons from the book.

I have Cutter's and Lambert's Physiology in my school; but I accomplish more by Cutter's Anatomical Charts—than by any book.

Fifty cents' worth of *chemicals* will explain the principles of Chemistry, better than all the books.

Natural Philosophy can be explained better by the aid of fifty cents' worth of apparatus, than by swallowing 20 books.

Astronomy, by diagrams on the black-board.

Botany, by drawing the shape of the leaves, &c., on the black-board, with the scientific name of each particular form: comparing the leaves themselves with their representations on the board: examining flowers, pointing out the stamens, pis-



tils, corolla, calyx and other parts, explaining their uses, &c.

True, the advanced pupils should be furnished with books: but to put a book into the hands of the novice, except to improve his reading, is useless.

Somuch has been said on the teaching of Drawing, that to select even the *best*,—would make a *book*. I find the best method of teaching children, is by their imitating on the black-board. After the pupil has learned to imitate, he advances rapidly by any process. Very young children can soon be made to learn to imitate correctly.

WILLIAM RUSSELL says, "Let a large, well-drawn, well-colored picture of an animal, or any other object, intelligible and interesting to children, be suspended over the black-board: let the children be asked a few simple questions about the form, color and the habits of the animal, if such is the object selected, &c."

It is hardly necessary to say more on concert exercises, but as those who have the most condemned this method of teaching, admit its uses, so far as I have advocated it, I will quote a few lines from Professor PAGE. He says:

"It may, sometimes, be useful. A few questions thus answered, may serve to give animation to a class, when their interest begins to flag; but that which may serve as a *stimulant*, must not be relied on for *nutrition*. As an example of its usefulness, I have known a rapid reader tamed into due moderation by being put in companionship with others of slower speech, just as we tame a friskful colt, by harnessing him into a team of grave old horses. But, aside from some such definite purpose, I have seen no good cause for this innovation. I am satisfied its prevalence is an evil, and worthy of the careful consideration of Teachers."

This is one of its principal advantages. In the teaching of reading, I have found it of great advantage. If imitation is the only true method of teaching reading—(which is generally admitted) how can he learn to imitate better than by reading in concert with good readers? As Mr. PAGE truly says, "he

will be tamed into moderation ;" he cannot run over the pauses. Neither can he lag ; he must keep up with the rest. Nor can he read in a different tone, without making discord : which the practised ear instantly detects. Great care, however, must be observed, or it will produce all those evils described by some Teachers. It must be used with discretion :—and more as a "stimulant than nutrition."

Mr. RUSSELL says, after acknowledging that "much is apparently done" by chanting tables, &c., &c., says, "but the memory, thus cultivated, is *verbal*, merely ; and the knowledge is of words rather than of things."

Now, if it be right to teach tables at all by memory, then is the chanting of them no more "*merely verbal*," than any other mode. Of the chanting, or concert recitation of any thing which exercises more than memory,—Teachers should be very careful.

#### THE TEACHING OF COMPOSITION.

We extract a few lines from a description in the Pennsylvania School Journal, by the compiler, of his mode of teaching composition.

First, let the pupil write something upon some subject, no matter what, in his own style ; the Teacher correcting the orthography and syntax, but not the manner. As the pupil advances, let his *style* be improved. This may be done by various methods. One is for the pupil to write on subjects made familiar to him by reading and study, such as Grammar, Geography, History, &c. His ideas may not be original, nor the diction : but he cannot be guilty of gross plagiarism, without being detected : as the Teacher is as familiar with the books, as he is. The ingenuity required, (if nothing more) to put the ideas obtained from the book, in other words, will of itself improve his style. We sometimes require the pupil to read aloud, a portion of history, or any thing else that he can understand, and afterwards write it, in his own language, and read it aloud to the school.

Extracts from a report on Composition, read before a meeting of the State Teachers' Association, held at Pottsville, August, 1854 :

\* \* \* \* \* Let the pupils generally read their own composition. In large schools, this cannot always be done; in such cases let none be read but the best ; and make its being read, a reward of excellence. Not merely the best specimens of diction, but those containing the smallest number of errors in orthography, punctuation, &c., &c., and in the more advanced classes, those having the least number of syntactical errors. By this means even the dullest cannot fail to acquire, by industry and perseverance, the highest distinction in the class. When the school is very large, it is necessary to fix the standard of excellence high, as time cannot be allowed for the reading of but a few examples. Let the standard be such that all can reach, but let the least error in orthography, the omission of the dotting of *i*, or the crossing of a *z*, condemn it.

The productions of one pupil may be sometimes read by another, who may point out the errors, and correct them, when it may be again read, and so continue until all are removed.

The following from the School Journal strikes us favorably. "The pupils sometimes direct their compositions to one of the other pupils of the same class, done up in letter form, to be read by him. After they are read they are retained by their respective readers, until the next composition day, to be corrected by them, and then read aloud to the school. Sometimes they are directed, as amended, to the original authors, to be read by them in their corrected form. They are fond of this exercise; and it is astonishing how it increases the demand for Dictionaries. We are better at correcting others' faults than our own."

We select the following from the Popular Educator.

"At first, never mind that the pupil's words are few; never mind that his sentences are ungrammatical; never mind that his thoughts are poor and superficial: let him write something; and *let that be his own*."

\* \* \* \* \*

Encourage the pupil to use every facility for the improving of his style; but teach him to think, and be original. Composition should be taught,—can be taught,—but merely to imitate the style of others, is very nearly allied to plagiarism.

The design of teaching Composition seems to us to be the teaching of thinking beings to express their thoughts clearly, distinctly and grammatically.

After all, we believe that the best method depends mainly on the diligence and the skill of the Teacher. The very worst methods may be made effectual for good, by the enthusiastic Teacher. If he enter into the feelings of the child, be a child, talk like a child, and write as a child, the pupil will improve as a child; and not, as many do, become men in style, while they are yet children.

Extract from an address on Physiology, by WM. FIELD, of Schuylkill Haven, Pa.:

“The muscles require rest, after having been vigorously exercised: thus we find that a person exercising but one set of muscles, soon becomes fatigued; and this is most strikingly illustrated in the school-room. The pupils, by sitting in one position for a long time, become restless, uneasy and inattentive, and thence arises the necessity of frequent recesses: particularly for small children. Not that we would have the pupil spend half of his time upon the play-ground; but give them all the exercise necessary for the health and vigor of the body; and with a healthy robust constitution, what else could we expect to find, but an attentive and comprehensive mind? I have met with a few Teachers (and I am happy to say, but few) who are opposed to recess, saying that the time can be more beneficially employed in the school-room. To such we would say—if the want of time is their only excuse, give ten minutes recess in the morning and in the afternoon session, and they will accomplish more during the day.”

#### MUSIC.

“Almost any Teacher can introduce music into his school: because, if he cannot sing, he will always find that it will only

require a little encouragement to induce the scholars to undertake to conduct it themselves. It will consume but very little time ; and it is always that time which, if not employed in singing, would be otherwise unemployed, or misemployed.—It is the united testimony of all who have judiciously introduced singing into their schools, that it is among the best instrumentalities for the promotion of good feeling and good order.”—PAGE.

To teach reading successfully, the Teacher should be well acquainted with the elementary sounds of our language, and should practise his pupils (especially the younger ones) daily on those sounds, in every degree of pitch and force.

Frequently explode the elementary sounds. The pupils in orthography should be taught to spell, not only by the common alphabet, but by the phonetic sounds. This will materially assist them in acquiring a full, clear, and distinct articulation.

Pupils should always stand or sit erect during their recitations.

“As soon as a child has learned three words, he should be set to read. ‘*What have you been reading about?*’ is a question which must ALWAYS, *without one solitary exception*, follow reading.”—GEORGE B. EMERSON.

“A Teacher who possesses the ability to read well himself, and to infuse the right spirit into his pupils, *will form good readers*.”—CHARLES NORTHEND.

We close this volume with a few more of the educational maxims, selected for the work, many of which its small size has excluded : those retained being very minute extracts.

“The following brief suggestions and rules in relation to writing, should be regarded by every Teacher, who would produce work of which he need not feel ashamed.

1st. Require the pupil to *sit up* while writing.

2d. Require all turns to be made without raising the pen.

\* \* \* \* \*

5th. Insist that the pen be held properly.



6th. Only those fingers which hold the pen should move in writing.

7th. The end of the pen-holder should point towards the shoulder.

8th. The hand should not be supported by the wrist, but by that part of the arm, a little below the elbow."—CHARLES NORTHEED.

#### EXACTNESS IN EXPLANATION.

"To show what I mean by exactness in explanation, I will take a common solution of a single question.—35 is  $\frac{5}{11}$  of how many times 11? The pupil says: 'If 35 is  $\frac{5}{11}$ ,  $\frac{1}{11}$  will be  $\frac{1}{5}$  of 35: which is 7: and  $\frac{5}{11}$ , or the whole will be 7 times 9; which is 63.' Now, the error here, is in saying 7 times 9, instead of 9 times 7."\*—NORTHEED.

We make this quotation, not to give a particular system of analysis, but to enforce the necessity of *system in explanation*. Not to teach the pupil to, parrot like, repeat a certain formula, but to explain *systematically, clearly, distinctly, and understandingly*. Teachers are apt to pride themselves on some particular form, without reflecting that the pupil's own form may be as good and even better for *him* than any other. True, the solution should be correct, and explained correctly, and in correct language: but let the language (if possible) be the pupil's own. If it be unsatisfactory, let the Teacher correct it. In most cases, if the pupil understands what he is doing, he will be right. When he hesitates, blunders, or explains unsystematically, and without exactness, it is because he does not understand what he is trying to explain. Make it clear to his mind, and it will *come out*. If not, '*draw it out*' by questions; not as the Teacher, given by Mr. PAGE, drew the 18 sheep out of the pupil, but an answer of some kind, from which to start. If an answer of no kind can be obtained, tell him at

\* This may be illustrated further, thus :—7 times 9 ninths would be 63 ninths: or, if one ninth is 7 dollars, 9 ninths would be 9 times 7 dollars; not 7 dollars times 9. Or the price of 130 yards of cloth at 6 dollars a yard, is 130 times 6 dollars: not 6 dollars times 130.



once, and *explain it thoroughly*, until you are sure that he understands it; and until he does,—proceed no further. But to continue the solution,—63 are— $\frac{1}{11}$  of 63 (or  $5\frac{8}{11}$ ) times—11: or as many times 11 as is contained in 63.

The question may be changed, thus:

1st.—63 are 11 times—what number?

Ans.—63 are 11 times  $\frac{1}{11}$  of 63.

Or—63 are  $x$  times  $\frac{1}{x}$  of 63.

2d.—63 are  $\frac{1}{11}$  of what number?

Ans.—63 are  $\frac{1}{11}$  of 11 times 63, &c., &c., &c.

“Teach the subject rather than the book. Remember that it is not Colburn’s arithmetic or Davies’ that you are to teach; but arithmetic; the science of numbers.”—GEORGE B. EMERSON.

“Make a pupil think that he can do a thing, and he can mostly do it.”—NORTHEND.

“Remember this,—that when the pupil *cannot tell*, he does not know.”—NORTHEND.

“Attention, *undivided attention* must be required of the whole class as long as the recitation continues.”—NORTHEND.

“Let not a Teacher complain too much of the *largeness* of his school. It is physically impossible that a Teacher can throw as much energy into his instructions, when they are given in the presence of but one (or of a very small number) as when they are communicated before a large school. The efficacy of teaching, depends, very much, upon its vivacity.”—BISHOP POTTER.

“A School Teacher is one who is duly qualified so to cultivate the physical powers, the moral sentiments and the mental faculties, as to fit his pupils for the proper discharge of their duties. This, and nothing short of it, is the Teacher’s true office. The time has passed away forever when the Teacher was supposed to be a kind of mere conduit-pipe for conveying, from a given number of books to the *memory* of the pupil, the contents of their pages.”—THO. H. BURROWES.

"The first lesson in Geography might be to set the class to draw a map of the school-room."—EMERSON.

"The most effectual way to secure the good will of a scholar is to ask him to assist you. Get a turbulent boy to co-operate with you in any thing, and *you have him*."—EMERSON.

"The Teacher's interest in the child will *never* be without its effect upon the parent: and when the parents are friendly, the pupils are obedient."—EMERSON.

"The Teacher should be cheerful. Cheerfulness in the face of a Teacher, is sunshine to the child."—EMERSON.

"Attend Teachers' Institutes, Associations, &c. Visit the schools of other Teachers, and witness their modes of teaching."—NORTHEND.

"Scientific definitions should be always impressed on the mind of the learner by the words of the Teacher, and not by or in the words of the book. It must be borne in mind that most scientific definitions are made up of words which themselves require explanation to the unlearned; and that the impression of these mere words on the memory, adds little to the mind's stock of knowledge, without the explanation.—Whereas, a preliminary oral explanation, by a judicious Teacher, renders every thing clear, and fixes the definition and its full significance in the pupil's mind indelibly forever.

In our opinion the properly qualified Teacher is the sole head and source of instruction of all kinds in the school; and the school-book is but the representative or exponent of the Teacher's knowledge, in the absence of the Teacher."—THO. H. BURROWES.

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